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Consumers' Research BULLETIN

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Editors

F. J. SCHLINK

J. B. MATTHEWS

M. G. PHILLIPS

Technical Staff

R. JOYCE

E. W. CHENEY

E. G. WATTS, JR.

Off the Editor's Chest

THE MUCH FOUGHT-OVER BILL to revise the present antiquated Food and Drugs Act in the interests of consumers, known as S.5, died last June when the House and the Senate failed to agree on which government bureau should have control of advertising. The Senate was for retaining at least part of control over advertising in the hands of the Food and Drug Administration. The House was in favor of turning it all over to the Federal Trade Commission. The result was that consumers were inadvertently saved from the enactment of a very unsatisfactory bill.

In the absence of a Department of the Consumer (proposals for which CR has formulated in detail), it is desirable that control over the advertising provision of any food, drug, and cosmetic bill remain in the hands of the Food and Drug Administration. That agency comes nearer to having a mandate to function in the consumers' interest than other departments of the government. The Federal Trade Commission's power under the law is to protect business men from unfair competition of other business men, not to protect consumers from all who engage in unfair practices; and a recent attempt to extend by legislation in Congress the Federal Trade Commission's power to protect consumers failed to obtain sufficient votes.

One valuable thing has come out of the delay in passage of a new Food and Drugs Act, namely, that consumers all over the country are becoming interested in the problem. Women's clubs, study groups, high school and college classes are studying the subject. Two states, Maine and Louisiana, have not waited for federal action but have very wisely gone ahead to pass new legislation on their own. Maine has passed a law requiring the registration of all cosmetics sold in the state and Louisiana has passed a food, drug, and cosmetic act modeled after the Copeland Bill. This business of new food and drug laws being enacted by the states has the manufacturers pretty much worried. As one trade journal points out: the Louisiana law "calls for the use of certified colors in drugs and cos-

metics. This is something which must be done on a national scale or not at all. Further the bill seeks to censor advertising—another thing that must be done nationally or not at all. How are national advertisers to keep their advertisements from getting into Louisiana if they are objectionable?" It is clear, indeed, that if certain states set higher standards for food, drugs, and cosmetics than those in effect nationally, the manufacturer will often have either to comply with those standards for all his products or refrain from selling in those states, since, in many instances, it is not practicable to make products especially for sale in one state.

Perhaps it is a wise policy for consumers to work first for really good control of food, drugs, and cosmetics in *their own state and city*. The results of the Roosevelt Administration's attempts at legislation show all too clearly that overcentralization of power in Washington doesn't work, and it especially fails to work in cases where consumers' rights are at stake. As an advertising trade journal points out, "there is the very real threat [to the profitability of advertising] of the home town lawmakers *who are much more conscious of local consumer pressure than they are of the interests of such national institutions as advertising.*" (Italics ours—CR) Too many consumers are baffled by their knowledge that the national stage has become too large for successful performance by any except professional politicians. Nevertheless, CR believes that you can be effective in your home city, county, and state in bringing about legislative changes that will actually and powerfully protect consumers.

After a few states have pioneered in consumer protection in the fields of food, drugs, and cosmetics, it may be easier to pass an effective federal food and drug act. It is an idea worth sober consideration and discussion with physicians, teachers and other civic-minded people, legislators, and lawyers interested in legal reform; it is an excellent topic for discussion by club groups.

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- AA—regarded as worthy of highest recommendation.
- B—intermediate with respect to quality.
- C—not recommended on basis of quality.
- cr—information from Consumers' Research's own tests or investigations.
- 1, 2, 3—relative prices, 1 being low, 3 high.
- 35, 36—year in which test was made or information obtained by the staff of Consumers' Research.

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Women's Coats for the 1936 Fall and Winter Seasons

THE QUESTION OF WHEN AND HOW to buy a fall coat so as to make a favorable purchase, is one which confronts the average woman about every three years. Stores promoting women's coats this fall will base their appeal upon the new Paris fashions, new fabrics, and the wisdom of buying early to secure a better selection of garments. Because prices are higher, the selling of fall and winter coats will be promoted more vigorously than usual in a keen competition for the consumers' money. This course will be followed by retailers in spite of the fact that the consumer will have little use for the garment so early in the season.

Fur prices are from 10 to 25 percent higher, while wool fabric prices are 12 to 15 percent higher than a year ago. Since the prices of these two basic constituents of a coat are already high, from the beginning of the fall manufacturing season, and because all present indications are that these prices will not rise further, it is difficult to see the wisdom of buying a coat until the purchaser is actually ready to put it into service. Increased raw material costs have resulted in higher retail prices for the same quality garment, and this has made it necessary for stores to endeavor to "trade up," i.e., persuade consumers to pay higher prices than they are accustomed to paying. For instance, retail stores are planning their fall sales campaigns so as to sell fur coats at price levels between \$125 and \$195 to their customers who in previous years purchased fur coats at \$100 or less. The same trading-up situation exists in the higher price brackets where the new price of \$295 (i.e., \$300) is offered to customers who previously bought \$195 (\$200) fur coats, a rise of 50 percent to the consumer, corresponding of course to a much smaller percentage rise in cost to the dealer.

In the case of fur-trimmed cloth coats the popular selling \$58 retail coat of a year ago will cost \$68 this year, and it is questionable whether the value-in-use will be any better, if as good. In view of the greatly increased fur prices, as well as the Federal tax on all furs, it is likely that fur-trimmed cloth coats costing from \$68 to \$98 will offer a relatively more attractive purchase to the consumer than low-priced fur coats, which offered such attractive competition to cloth coats in 1935.

This article aims to outline briefly the market situation as well as important technical and practical points to bear in mind this season for one intending to buy a dressy, sport, or fur coat.

Dressy Coats

The fabrics offered for dress coats this season vary widely in their construction. Mohair yarn decorations using knots and nubs (irregular yarns) create a rough surface. The effect of the mohair is to give the fabric a lustrous or shiny appearance, but in a number of cases the knots are large and protrude considerably above the surface. This makes it necessary for the purchaser to compare carefully the various types of knotty fabrics for her-

self, and to decide whether the knots are so constructed and secured that they may catch or pull out so as to leave holes or make the fabric appear shabby. A majority of the fabrics offered, however, will not cause trouble in this respect, if the results of preliminary laboratory tests can be taken as some indication of probable consumer experience in wearing the garments. There is, however, a definite tendency for these rough-surfaced coats to appear worn and shabby almost from the outset, purely because of the characteristics of construction just described.

Another type of fabric available and growing in popularity with women, is broadcloth. Most of the new broadcloths will not water-spot and have a permanent finish that will quickly shed lint and dust. Broadcloth and velour are used in the more expensive coats and there is every reason to believe that they will give wearing satisfaction. Lightweight broadcloth used for dresses, however, will not give nearly as good service as the heavier coating weights.

Hair cloths are also popular fabrics in which animal hairs, such as Fouine (otherwise known as Marten and somewhat scarce because of large demand), Angora, Skunk, and others, are used for surface decoration. These hairy surface finishes are attractive to the eye, but quite subject to shedding, and may cause much inconvenience to both the wearer and those who may come into contact with her.

A careful examination of the fall 1936 fabrics offered for dressy coats suggests that there are three major cloth manufacturers whose fabrics are usually 100 percent wool and generally well constructed. The output of these manufacturers undoubtedly supplies material for more than half of the better dressy fur-trimmed cloth coats, and two of the three manufacturers have carried identification through to the consumer by means of tags attached to each coat or by labels sewn in them. The coats which can be so identified are made by the Botany Worsted Mills and the Forstmann Woolen Co. The third mill in this group, A. D. Juilliard & Co., does not provide consumer identification for its product at present. It is found that retail salespeople will often state the name of the manufacturer of a garment's fabric without being at all certain in fact that it is of his make; it is therefore desirable that consumers look for an attached label (which can usually be trusted) rather than depend upon a salesperson's assertion or opinion. For the woman who is interested in knowing what might be in the fabric besides wool, it is advisable to ask this question of the coat buyer for the store. Remember that it pays to buy an all-wool fabric in a dressy coat if you want the maximum in durability, continued good appearance, and comfort.

One of the "tricks of the trade" is to omit the interlining of a coat altogether. Attempt is made to compensate for this deficiency by using a slightly heavier fabric weighing approximately 11 to 12 ounces per square yard. This practice ought to be

borne in mind when examining a coat at the time of purchase. Most interlinings are made of cotton fleece or felted wool and they are essential to assure the wearer protection in colder climates.

The question of weighted silk linings continues to be a problem because women prefer to buy coats with linings which seem to have body and weight—even when that is artificially achieved—rather than the lighter, more lasting pure dye silks. Such consumers are victims, as it were, of their ignorance of the poor wearing qualities of heavily weighted silk, and retail buyers and manufacturers do not fail to supply what the consumer likes, however bad her selection. Weighted silk linings have very poor durability, as most women have found from experience. The use of rayon linings in coats has grown rapidly, as they are proving to be both durable and comfortable compared with the common low-grade weighted silks.

Sport Coats

The most popular fabrics for use in sport coats are wool fleeces. These are being offered in a wide range of colors at all prices. The great majority of fleeces available are made of wool only. However, there are available in the stores a good many fleece coats which are mixtures, sold under a trademarked name formed by combining syllables from names of various fibers. In these cases there is no identification whatever of the percentage fiber content of the patented-name and "secret" mixtures. Since there is no known method reliable in all cases for determining the exact percentage content of such mixtures to combat such a situation as this, the cloth manufacturers are in an excellent position to take advantage of the consumer and of each other, as well as of the retail store buyer, and to offer a fabric under the name of a fiber which may or may not be included, or may be present in only a trifling proportion. Recognizing this problem, the National Association of Wool Manufacturers has taken steps to see if specifications and standards can be established which will make it possible to agree upon a uniform basis of description and provide some degree of check against misleading statements.

In the meantime the purchaser of a fleece should by all means beware of fancy-sounding, non-descriptive, unrevealing trade names used in describing a coat fabric; remember that whenever such a name is used as the sole "description" of a fabric one is put into a position where she must buy on the basis of color, weight, and feel alone, with no clue to wearing qualities, future comfort, fit, or appearance.

There are five kinds of animal fibers which are commonly used in fleeces. These include Vicuna, Alpaca, Mohair, Llama, and Wool, of which the last is by far the most common. Vicuna is so scarce that a fabric made entirely of the fiber costs \$65 a yard at retail. A 100 percent vicuna coat commands a price of \$250 or more in the better stores. Thus when one is offered a "beautiful vicuna" coat for \$100, a little hesitation is well advised.

Fleece fabrics made by S. Stroock & Co. and carrying their label can generally be depended upon.

This firm makes a number of blended wool fabrics, but so far as is known, no cotton mixtures. It would be a stabilizing move and helpful to purchasers for Stroock or some other manufacturer to take the lead and supply, on coat labels, full data as to percentage fiber content. The Worumbo Company also makes a line of high quality fleeces and other coatings.

The following is typical ballyhoo in advertising of fleece coats by retail stores: "Fleeces have super-resistance to wear because of the woolly face that takes the knocks before the real construction is touched." On the face of it, this statement seems reasonable enough, but if the consumer were properly informed she would be told that the woven construction has been partly destroyed in the manufacturer's finishing process in making the soft, fleecy nap. In this finishing process the nap of the fabric is raised and therefore the woolly face fibers have already "taken the knocks" even before the coat was made from the cloth. As a matter of fact, it is well known that the woolly face has extremely poor durability and that it soon wears to a point of shabbiness.

Other fabrics in use for sport coats include knotty tweeds and rough-surfaced mixtures. These fabrics, being made of woolen yarns, lend themselves readily to adulteration. It is therefore necessary that the consumer take special precautions in estimating the value and interpreting any manufacturer's or dealer's statement of the fiber content of a tweed coat. The danger of adulteration is chiefly a problem in the low-priced tweed coats, and the majority of good tweeds will be found to contain 100 percent wool.

Fur Coats

In order to assist the trading-up policy of stores and to fit in with fashion trends, fur coats for fall have been extensively dyed. New shades of gray and brown are offered in Marten and Kolinsky. The fur industry at present regards women as being particularly "fur coat conscious," and is featuring swaggers, princess-swaggers, and intermediate-length "costume" coats. Present indications are that Hudson Seals, Coneys, Persian Lambs, and Caraculs will be used in at least 85 percent of the fur coats sold to consumers this fall. Since these four furs involve such a high percentage of the total, detailed attention to their characteristics will be given here.

One of the most interesting and important problems of the fur coat purchaser is the durability of various furs. This is a rather difficult subject, and expert opinions will be found to differ widely. Of course the life of a fur depends greatly upon the wearer and the treatment she gives a garment. The expectancy of life as indicated for the following furs is the result of experience and cannot be accurately applied to a particular sample of fur, since the character of the pelts is so varied. The following is a brief description of the popular furs already referred to:

Hudson Seal (seal-dyed muskrat) should wear from two to four seasons. Its hair side is good, although the skins are apt to be thin and to require

an extra amount of greasing in order to prevent the leather from tendering.

Coney may be expected to wear from one to two seasons. It is used in many combinations on low-priced coats. Long-haired rabbits which have been French-plucked and dyed are generally believed to have better leather and fur, which may be expected to stand up well for two years.

Persian Lamb. Full Persians should wear from four to five seasons, and may be rated as giving good wear. There is less likelihood of the fur peeling today than formerly, because of improved processing technique. "Half-Persians" should wear two seasons and do not have the wearing qualities of full Persians, although they do have a strong leather.

Caracul should stand up from two to three seasons. The Chinese varieties are to be recommended as providing better wear than the Russian types. In the dressed peltry, number one grade should be a skin without protrusion of hair bulbs or hair coming through on the flesh side. This requirement is worth keeping in mind when buying any of the above-mentioned furs.

It is well to remember that at best a woman will get service from a fur only in proportion to the amount of care given it, and that one day of ill-

treatment will undo months of good care. Regular cleaning and careful storage are quite necessary. There is no certainty, however, that the new gas processing before storage is as effective as stores advertise it to be, and there is reason to believe that this process is simply a new way of getting an extra cut from the fur consumer's dollar.

A recent survey of customer returns of fur coats indicates that approximately 40 percent are returned by reason of unsatisfactory furs, 20 percent for faulty workmanship, and the balance for other reasons such as bad fit, poor lining, style, and price shortcomings. Since the returns comprise approximately 10 percent of all retail fur coat sales, it would appear that one out of every 17 women who buy a new coat will have to return it to the seller because of unsatisfactory furs or faulty workmanship in manufacture. This is not a very encouraging ratio; it is plain that it would be profitable to manufacturers and retailers to make serious endeavors to reduce the frequency of these defects. The odds in favor of a woman's getting a first-class fur coat are not as high as they ought to be. The consumer paying from \$100 to \$500 for a fur coat has a right to expect much better assurance of satisfaction than she is now receiving.

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ROBERT T. PULLAR.

Research Projects Suggested

IN MARCH, 1935, we developed briefly in CR's *Bulletin* the importance of orienting research in the sciences and the technical arts around the problems of the consumer, instead of merely carrying on studies and investigations on the general theory of "science for its own sake," or as it comes out more often than not in the social sciences and in home economics: science for the sake of avoiding controversy. The budding home economist instead of doing her studies in the graduate school in such practical and important matters as Modern Techniques of Food Adulteration, or The Contributions of Chemistry to Reduction of the Amounts and Grades of Flour and Other Food Materials Used in Commercial Bread and Cake Production, is more likely to be found carrying on a "market survey" on the utilization of electrical refrigerators or waffle irons by women in the upper income levels in Berkeley, California, or Raleigh, North Carolina, or making efforts of the most strenuous and footless character to determine how the manner of service in the dining rooms of the grandees of colonial Virginia was evolved from overseas origins.

For a long time it was our belief that theses and research projects of the sort common in some academic circles were chosen because there was something more scientific about Phototropism in *Daphnia* than about leather for suit cases, upholstery materials for chairs, or the dangers of poisoning from enameled kitchenware. Now, we know that there are sound administrative reasons for the researchers working at matters of slight or negligible social and economic importance in college and university

laboratories, and letting the more important questions remain unsolved and unpublished.

In the less populous states and in states where there are few large or powerful manufacturing and marketing concerns, the college and university still retain a large part of their freedom to conduct research according to the old patterns of honor and workmanship which existed before college presidents were hired primarily for their ability at raising money, and at keeping it coming in by their ability to avoid controversy; in such institutions, much can be done to put academic research upon a plane of practical economic utility to the common man, to the dirt farmer, to the small enterpriser, or to the craftsman who is engaged in genuinely useful handicraft production. Such universities as Cornell and other institutions in a predominantly farming or small town region have done much work of the greatest utility in such ways. One western university actually carried out tests of roll roofing materials under the conditions in which they are commonly applied to farm buildings, and, after various periods of use, showed pictures of the products and reported on their condition and gave the brand names of the several kinds in terms of their character and performance, an occurrence so rare in the annals of Academia as to warrant being memorialized as an exemplary and phenomenal service to the plain people of the state.

In what follows, an attempt is made to indicate a few examples of subjects for research in consumers' goods and for the benefit of consumers, that teachers in colleges and universities may find it desirable to present as subjects for investigation

and research by students, and by graduate students and teaching fellows. The examples given are to be regarded merely as examples; their detailed formulation and expression can only be arrived at after close consideration in terms of the particular interests of an institution's underlying community and of its teaching staff, and in consideration of its laboratory and library facilities. For convenience, the problems are roughly classified as to the department of knowledge into which they approximately fall. Readers will please understand that these proposed projects and studies represent only a small number out of hundreds that could easily be set down as suitable for this purpose. CR hopes as time permits to increase this list of subjects and projects especially adapted for exemplifying the consumer's, and a consumption-economic and consumption-technologic, approach to the social and natural sciences and the technical arts. Suggestions for other topics along this general line and in other fields of college and high school teaching in which the consumer interest and point of view can be introduced to advantage will be gladly received and compiled for future use of teachers and others concerned if significant interest is shown in this preliminary list of proposals by those most concerned.

Economics

A study of the relationships of cost and selling price in the advertised ready-mixed foods, including packaged cake and biscuit mixes, pudding mixtures, ready-prepared ice cream.

A compilation of costs of home or school production of common useful articles and materials, such as writing and mimeograph ink, tooth powder, scouring powder, floor wax, etc., and an examination of the bearing of such costs upon the advantages or otherwise of mass-production and mass-distribution of such materials in commercial practice.

A study of the relationship of advertising and commercial propaganda in teaching materials used in home economics, dietetics, and other courses to the trend away from home production of common useful goods and supplies.

Physics and Chemistry

Development of short-cut methods of examination and analysis for materials commonly purchased in small quantities or for other reasons not warranting careful and detailed analyses. Such methods are available, or can easily be made so, for bread, lard, butter, ink, writing paper, carbon paper, paper towels, enamelware utensils, kitchen cutlery, scissors, twine, paste and glue, and household rubber goods.

A compilation, digest, and simplification of the available literature on detection and determination of metallic poisons commonly present as contaminations in drinking water, beverages, and common foodstuffs.

A compilation of all available simple methods of test of household supplies and materials by chemical and physical methods, that could be applied by students of physics, chemistry, or engineering.

Specifications for simple home chemical laboratory equipment and supplies suitable for qualitative and some quantitative work on foodstuffs and household supplies, including the adaptation of readily available micro-chemical techniques that could be adapted to use by relatively unskilled workers.

Engineering

Development of simple test methods for determining efficiency, safety, etc., of an electric fan; an electric iron; a toaster; a kitchen food mixer.

Development of test methods and specifications for fountain pens; for pencils, ordinary and mechanical.

Development of a short-time test to determine the dirt-removing performance of the household vacuum cleaner (present available methods are tedious and long-drawn-out).

A critical examination of the household heating stove using (a) coal, bituminous or anthracite, (b) wood, (c) other fuel; to determine needed improvements in design to increase durability, convenience, cleanliness, safety, ease of maintaining a fire for long periods, and of controlling the rate of combustion with greater certainty than is now possible.

A study of the design of kerosene or of gas cooking stoves to determine needed improvements in safety, efficiency, ease and convenience of lighting, use, and cleaning.

A study of the durability in ordinary wear of surface finishes common in the home, or available for such use—paints, enamels, varnishes, lacquers, drying oils, floor and furniture waxes, etc.

Home Economics

An examination and test of clotheslines of different types.

A study of household brushes and brooms from the standpoint of methods of construction, quality of materials, durability, and types best suited to the needs of the average household.

A study of the limitations of use of vacuum cleaners, carpet sweepers, brooms, brushes, etc., and a determination of the cleaning operations for which they are adapted and commonly used. Comparison of their efficiency in cleaning in terms of energy and time expended.

A critical study of rugs in terms which will give probable cost per year of use, ease of maintenance, cleaning and repair, their effectiveness for various purposes; means of distinguishing deficient and spurious types of construction from good and genuine types; a guide to purchase of the various common and cheaper types of rugs for household uses.

Nutrition and Foodstuffs

A study of commercial bread, cake, and pastry manufacture and of the special chemical and other ingredients used, especially those which increase volume or water holding power, reduce the rate of staling or improve structural firmness and durability (see chapters IX and X of *Eat, Drink and Be Wary*, by F. J. Schlink).

A study of the tendency toward increased utilization of sugar in household cookery, and directly and

indirectly in the increased consumption of manufactured food products including ice cream, soft drinks, preserves, sweetened and canned fruits and vegetables, jellies made with pectin and extra sugar, cakes, pastry, cookies, other sweet desserts, and candy. The probable effects of such increased sugar consumption on the health of the population.

Political Science and Sociology

A study of the reasons why the purchasing officer of the city, town, or university does or does not purchase under specifications and standards such as are extensively used in the federal government service and in a few exceptionally well managed city and state government and large corporation purchasing departments.

An attempt to determine exactly why government departments, boards of health, city chemists, etc., do not give publicity to their findings and test results in matters directly affecting public health or safety, and what forces restrain them in particular instances.

A study of the sources of publicity releases printed by a large or small city newspaper, or by a

popular weekly or monthly magazine, and an attempt to define the relationship between such publicity and the advertising and types of advertising which appear in the same publication.

Unclassified

A test of the certification plan, so called, of the Bureau of Standards to determine whether articles, bought by ultimate consumers under Federal Government Specifications and "certified" to comply therewith, actually comply as delivered, with such specifications. Typical articles to which this method of purchase and test might be applied in a university or college laboratory are: ink, glue, type-writer ribbons, varnish, water hose, automobile tires, gasoline, lubricating oil.

Methods of testing and examining seeds for home vegetable and flower gardens.

A study of the development of the mouthwash and "oral antiseptic" market in the past 25 years, the nature and degree of truth of the advertising claims used in developing this market, and a study of the psychological appeals used to broaden the market.

Automobile Care and Maintenance

The need for information on this subject has been amply illustrated by the complaints CR has received from subscribers on the shortcomings of their automobiles, which, in a large proportion of cases, can be directly traced to incorrect maintenance, such as operating at high speeds with an oil of low viscosity, etc. CR, therefore, presents the following brief hints, which, although not new to many readers, we believe will be of marked value to automobile owners in increasing car life and decreasing car troubles.

1. The car should be greased every 1000 miles according to the directions in the instruction manual accompanying the car. Do not rely upon the service station to do a complete job. The majority will omit greasing points which are not easily accessible, unless specifically instructed. For example, many stations will not grease front wheel bearings unless attention is directed to them. The oil level should be checked each time gasoline is purchased, and at least every 200 miles when driving at high speeds, and at once if the temperature indicator on the dash shows a sudden unexplained rise, or the oil pressure gauge a drop, even if only a moderate one.

2. Except for driving in desert country, or where air temperature is 100°F or over, or when driving several hundred miles at steady speeds of 60 miles or over per hour in hot weather, oil heavier than S.A.E. 30 should not be used in the majority of cars. Hard driving with oil as thin as 10W is likely to ruin any engine. The viscosity of the oil at running temperature of the car is the most important characteristic of any oil.

3. The engine should never be run faster than moderate idling speed until the water temperature reaches the operating range, and never over 2000 rpm, or about 40 mph, the first five minutes of run-

ning. Never drive faster than 70 to 75 percent of the maximum speed of the car. Use moderate rates of acceleration.

4. On long, hard trips stop once every 200 miles in the shade and allow the engine and oil to cool 15 to 20 minutes. Stop a while after any long, hard climb. Never shut off the engine immediately after completing a hard climb or fast run—allow it to run at moderately fast speed for a few minutes to allow cylinders to cool more evenly.

5. The engine should be given a complete checkup and adjustment at least every 10,000 miles, and the chassis given a general tightening every 5000 miles. It is important that not only the body bolts but complete steering mechanism be included in the general tightening. The cooling system should be flushed and cleaned twice a year, before and after the use of antifreeze solution. Spark plugs should be cleaned and the gaps correctly adjusted every 1000 miles. CR advises against having your plugs cleaned by the A-C and Champion machines, which through vigorous sales campaigns have been installed in many service stations. These machines, we believe, sacrifice future performance to present mechanical efficiency; their tendency to remove the glaze from the porcelain will cause fouling to occur much more rapidly than in plugs carefully cleaned by hand. Air cleaners should be cleaned every 2000 miles by washing with gasoline, and then dipped in engine oil. Shock absorbers should be checked by a trustworthy serviceman at least once a year or every 5000 to 10,000 miles (perhaps less if car is used much on rough roads) and fluid added as necessary. Brakes should be adjusted at frequent intervals, as the safety of the car depends upon their being kept in the best possible condition. Grease or oil working its way into the brakes is one of the

most common causes of brake failure. In such cases the brake drums and linings should be cleaned with non-leaded gasoline and the leak stopped by replacing the felt washers in the axle. The foot brakes should be capable of stopping the car on a dry, hard road free from loose material within a distance of 35 feet from a speed of 20 mph; at the time of servicing brakes, however, they should give better performance than this and should be adjusted to stop in a distance of 20 feet from 20 mph.

6. To attain most efficient operation, the spark should be advanced or retarded (on cars where this

important adjustment can still be made by the driver) to suit the octane rating of the gasoline being used.

7. When the car skids, do not touch the clutch or jam on the brakes. Stop feeding gas, and, providing the road is clear to permit the maneuver, turn the wheel in such a manner as will tend to move the car in the direction toward which it is skidding. If necessary to apply the brakes, do so as gently as the emergency allows, and release them at once if the skid becomes more marked.

Home Fire Safety

FIRES CAUSE AN ANNUAL LOSS of some 10,000 lives, several times that number of injuries, and property damage of several hundred million dollars. Statistics indicate that the fire waste is a serious national problem. But how does it affect the individual householder, and what can he do about it?

Burning is a horrible death, and any serious burn is painful and likely to cause disfigurement. We all fear fire, but, because of lack of personal experience, this fear is not sufficiently acute to serve as a very satisfactory sales appeal for fire protection. The average individual could live for 600 years before being burned to death or having any member of his immediate family suffer serious personal injury from fire. Averages, however, do not afford any comfort when your own child is burned. Everyone will agree, in theory, that every possible precaution should be taken to prevent fire, but as a practical matter it is only a very small minority of householders who are willing to spend any money or take much trouble to this end. The fire record would be infinitely worse were it not for fire department activities and the various fire prevention requirements imposed by building codes, electrical ordinances, and other legislation.

Because of the effect of fire insurance in distributing losses and relieving the individual of the consequences of his carelessness, property damage from fire seems to be of very little personal concern. In cities with good fire department protection the average home will stand 1000 years before being destroyed by fire. In rural districts fire losses are greater, but the chances of serious fire in any one building in any one year are still mathematically very small. The indemnity paid by a fire insurance company, however, never can completely compensate for the disruption of the home caused by fire, and the householder has every reason to take precautions.

The various precautions against home fires may be roughly classified into: (1) those having to do with the construction and permanent equipment of the building; (2) care in the operation and maintenance of the home; and (3) the installation of extinguishers and other fire protection equipment. The construction of the building and installation of fixed equipment are outside the scope of this article, which, on account of space limitations, will

concern itself only with the fire problems of the operation and maintenance of the home and with home fire protection equipment.

One reason that fire prevention precautions are not popular is because they are for the most part necessarily expressed in the negative. Prevention of fires requires not doing various things which may cause fires. The following paragraphs cover the causes responsible for the greatest loss of life. For the most part the prevention of such fires involves no money expense.

Children left alone in the house are very likely to get in trouble with fire in one way or another. It should be a first rule of fire safety never to leave small children alone in the house and above all never to leave them locked in. Sometimes children handle fire emergencies competently, but it is too great a chance to take. In a typical case in Brooklyn, New York, on November 28, 1935, two children were burned to death and two others were seriously injured in a fire which occurred while their mother was out marketing. The children had discovered a fire under the stairs, extinguished it, as they mistakenly thought, and resumed their play. The fire then rekindled and the blaze cut off their escape before they realized their danger.

Children are naturally attracted by fire, and many deaths are caused by children playing with matches, or around bonfires. The standard recommendation for the prevention of such fires is to keep matches away from children. This is practical advice as regards very young children, but is questionable psychology as children grow older, when prohibition is likely to defeat its own purposes. A limited, supervised use of matches for lighting fireplace fires and other legitimate purposes helps to eliminate the glamour and makes less attractive the surreptitious lighting of matches in closets or attics that might otherwise occur. If children are caught in the act of playing with matches, an unexpected bucket of cold water is more effective in impressing the dangers of uncontrolled flame upon a child's memory than any amount of scolding or verbal explanation.

Kerosene used to kindle fires was responsible for 29 deaths in the State of Wisconsin during 1935. It is not generally realized that kerosene when heated to above its flashpoint of slightly over 100°F is similar to gasoline in its burning properties.

Many fires are also caused by the use of gasoline for kindling kitchen stoves or the use of gasoline or other flammable liquids as an ingredient in the home manufacture of various compounds that are heated over stoves. All such liquids when necessary to be used at all, should be used out of doors, for a number of good reasons, and treated with the greatest respect at all times.

Home dry-cleaning operations using gasoline or other flammable liquids are estimated to cause about 200 deaths a year in the United States. The fumes from the gasoline when mixed with air are explosive and may be ignited in any one of a hundred ways. The larger the quantity of gasoline used the greater the hazard. The use of gasoline in domestic washing machines has wiped out a number of families. Even doing the cleaning out of doors is not altogether safe.

The ignition of clothing by contact from furnaces, stoves, and heaters is a common cause of fire fatalities. There is no preventive method for this, except ordinary care. It should also be remembered that woolen clothing is not easily ignited whereas light cotton garments may be readily ignited by small sparks.

Smoking in bed is the cause of many deaths by fire. Likewise, lighted cigarets discarded in wastebaskets may smoulder and cause a bad fire to start after the family has gone to bed. This type of fire is insidious because actual ignition occurs only under certain rather narrowly limited conditions, and the smoker is prone to assume that it will not ever occur. It may be possible to throw down a thousand lighted cigarets before starting a single fire.

The most dangerous fires from the standpoint of life hazard are those which start in basements or on lower floors, while the family is asleep. A frequent cause of such fires is from heating devices which have been improperly installed or carelessly operated. Generally, both improper installation and careless operation are factors in fires, since a furnace, for example, which has been installed properly and in workmanlike fashion is not likely to cause a fire no matter how badly it is "overheated."

Many fires start during the night from electric irons which have been left connected during the evening and gradually get hotter and hotter, thus starting a fire after all the family is in bed. Irons which are equipped with automatic temperature control elements are less dangerous, but any iron may start a fire if left long enough in contact with combustible material since, in order to do satisfactory work, it is necessary for an iron to run at a temperature high enough that it will, under some conditions, start a fire. Various other electrical appliances which are not disconnected may be responsible for night fires. A fan may, through vibration, fall off its support, have its blades blocked or jammed so that the motor no longer turns, and then quickly overheat. Cords on portable appliances, if of inferior quality and not renewed from time to time as they become worn, may also cause short circuits and fires. It is a good rule to keep electric cords as short as possible, and, wherever the existing wiring installation does not furnish a sufficient number of conveniently located outlets, to have

additional outlets installed rather than to run loose wires around the baseboard or under rugs. Fuses (or, occasionally, circuit breakers) which are found in every electric circuit are the best available safeguard and should always be carefully maintained as the safety valve in the electric circuit. Using fuses with an ampere rating higher than the standard for individual circuits (usually 15 amperes) or deliberately short-circuiting a burned out fuse (whether for lack of a replacement fuse or because the function of the fuse is not clearly understood) is simply to invite fire.

Spontaneous combustion is another insidious fire cause that may be responsible for night fires. Linseed oil, various paints, and some floor oils and polishes have the property of heating spontaneously when distributed on rags or mops or on overalls or other clothing. This heating is usually a matter of hours or even days before dangerous temperatures are reached. To avoid this danger, oily or painty rags should be promptly burned or placed in closed metal cans. Spontaneous heating commonly occurs only where the oily rags are bunched together; there is little danger of heating if an oily cloth is carefully spread out as on a line. Cases have been known where linseed oil and paint spilled on a pair of overalls, which afterwards were hung in a closet, have caused spontaneous combustion followed by a serious fire.

Whatever the initial cause of fire, the rapidity of its spread and degree of danger depend largely upon the amount and character of fuel present. Ordinary good housekeeping helps greatly in reducing the amount of combustible material from the viewpoint of fire prevention. Good housekeeping consists not merely in order and neatness, but in the removal of all unnecessary combustible material, such, for example, as broken furniture and old mattresses that are saved with the thought that they may some day be repaired. Such accumulations of quickly combustible material, which may be ignited by a flying spark from a match, a discarded cigaret, or hot ashes blown from a pipe, are dangerous anywhere, but especially so in the city because of greater likelihood of access by furnace tenders, janitors, meter readers, and others whose movements may be unknown or unsupervised. In the country, where people are more careful of fire, the risk of ignition is less, but if it occurs the results are much more serious. The extreme example of saving unnecessary combustible material lies in putting discarded Christmas trees in the basement rather than disposing of them at once. A recent fire prevention campaign in Providence, R. I., disclosed the fact that over 500 old Christmas trees had been kept until September.

When a fire occurs, life saving should be the first consideration and fire fighting secondary. Everyone should get out of the building and the fire department should at once be called. Unless the fire is obviously very small and readily extinguished it is unwise for anyone except a trained fireman to enter a burning building. Many lives are lost in home fires when persons already safely out of the building re-enter it to salvage valuables and are trapped by the rapid spread of the flames or of gases from

burning material. Persons who have not had experience with fires commonly fail to recognize the rapidity with which fire can spread in the ordinary building, and the extreme hazard of inhaling the smoke and gases which may suddenly fill a given space in the burning building and make escape impossible.

Effective action in case of fire depends to a very large extent upon previous planning for the fire emergency. School fires seldom cause loss of life nowadays because the school population has regular training in periodic fire drills. Occasionally prudent citizens have fire drills in the home, but few householders do so. A home fire drill conscientiously conducted and frequently repeated is one of the best fire safety measures. If every member of the family knows what to do when fire occurs, fatalities are unlikely.

The night fire which gains rapid headway before discovery presents a difficult problem. There should be a safe emergency exit of some kind in every room for use in case the main stairway is rendered impassable by fire or smoke. Some houses are fortunately so arranged that a second stairway, or porch roofs, or balconies provide a way of escape from sleeping rooms. Ropes or various types of portable fire escapes are sometimes provided. These are useful if they are used occasionally in drills, but if they are installed and then forgotten they may be worse than useless. In a recent fatal hotel fire where it was reported that every room was equipped with a rope fire escape there is no indication that any of the occupants even tried to use the ropes.

Most people know that the way to extinguish fire in clothing is to wrap the victim in a rug or blanket, and that in a smoke-filled building the air is better near the floor. But fire reports indicate that few people understand the influence of draft on the spread of fire or know that even an ordinary wooden door, kept closed, will hold back fire for some minutes. The seriousness of extensive burns depends on the area of the skin affected as well as the depth of the burn and is often not appreciated, owing to their delayed effects. Any large area burn, even though it may not seem very serious, should have immediate and skillful medical attention.

Fire protection equipment, like all mechanical appliances, must be regularly inspected and maintained in order to be sure that it will be in proper operative condition. Fire department and insurance inspections assure maintenance of fire equipment to a large extent in industrial, mercantile, and public buildings, but in the home no such service is provided except on the individual initiative of the householder. It is human nature to neglect equipment which is not regularly used, and, unless the householder has sufficient interest and determination to have a systematic program for the maintenance of fire appliances and the instruction of members of his family in their use, he is not likely to secure the actual fire safety which the salesman assured him he was obtaining by his purchase.

Inexpensive automatic fire alarms are now available which sound an alarm upon any dangerous rise of temperature. If properly installed and maintained, these should give timely warning of fire starting in the basement while the family is asleep. However, it may be questionable as to whether sound sleepers in second floor bedrooms will hear an alarm in the basement with doors closed. Any alarm system, to be effective, should be so arranged as to make itself heard in the sleeping rooms of the house.

Automatic alarms used in homes are spring- or electric-operated. It is only by means of an electric extension that a gong on the second floor can be set off by a fire detecting element in the basement. The electric current source may be from batteries, which are unreliable unless regularly maintained, or from the electric lighting service, which may be interrupted by a temporary failure of the city system or by defective wiring in the house which starts a fire and cuts off the current before the fire alarm operates. These difficulties can all be overcome and automatic fire alarm service of nearly 100% reliability provided, but only at an expense of careful planning and an amount of time or money, or both, for installation and maintenance service which most householders would consider prohibitive.

Fire extinguishers are principally valuable in saving property, though occasionally they have a life-saving function. The same is true of water buckets and garden hose connections. In some instances lives have been lost through ill-advised attempts to fight fire by persons untrained in the use of extinguishers, under conditions where the prudent course of action would be to get everyone out of the house immediately and wait for the fire department. Extinguishers of a type suitable for the probable home fire, regularly maintained, and used intelligently by persons who know how to operate them, are excellent first-aid protection, but unless these conditions are met they are a questionable investment.

Automatic sprinklers, which have a record of 96% efficiency in industrial and mercantile properties during a period of 40 years, have recently been adapted for home use in the so-called "junior" sprinkler systems which are connected to the domestic water supply. These systems, installed to protect basements and kitchens or other places where fire is most likely to start, should provide both life and property protection. They have the automatic fire alarm feature in addition to applying water automatically at the point of origin of the fire. There has been little experience with these junior systems to date, but they are promoted by established sprinkler companies and should afford reliable protection with comparatively little maintenance. They are well worth considering for any householder who feels that he can afford the expenditure required or whose home conditions are such, due to illness of some member of the family or absence of the householder at times, that especial care and safeguards are warranted.

ENGINEER SUBSCRIBER

The Electric Clock

IN SPITE OF THE MUCH HERALDED and widely expected development of electric clocks, the day of the pendulum clock is not yet past. The new improvements in timekeeping still lack certain qualities of simplicity, reliability, durability, and ease of repair which characterize clocks regulated by a self-contained pendulum. The prospective purchaser, to whom the cost of a clock and of keeping it running are factors that cannot be neglected, will do well to weigh carefully the advantages and disadvantages of the different types before making up his mind.

The most important kind of electric clock is that in which the hands are driven, normally, by an electric motor of the type known as synchronous or sub-synchronous, which has the property of running in step with the rotating machinery at the power house which produces the electric current. The motion of such clocks' hands is determined, while the current is on, entirely by the frequency or number of alternations per second of the power supply. Not all sections of the country have the controlled-frequency circuits which are necessary for accurate running of the electric clock. In a few districts the frequency is different from that in others, so that there is the additional difficulty that an electric clock may not be adapted for use wherever electricity is available. Regulated-frequency electricity supply is nearly universal, by now, in urban districts; yet in any case, the purchaser of an electric clock, especially a person living in a district served by small independent power companies not tied in with others, will do well to ascertain whether his district has frequency control and whether the control is reasonably accurate. Power companies which operate on large networks usually have the necessary frequency control since that control facilitates the exchange of power that is convenient under certain load conditions between different power plants on the network.

The method of frequency control is somewhat as follows: Two clock dials are mounted in the power house, one driven by a good pendulum clock that is periodically compared with a standard time signal and the other by a synchronous electric motor fed from the mains of the power house. An operator watches more or less regularly the two dials. When the electric clock gains over the pendulum clock, he operates certain controls to slow down the generators, and when the electric clock loses, he speeds them up a trifle. He thus keeps his own electric clock and all those in the area served by his generators "in synchronism" with the pendulum clock, within certain limits. Thus, one may note that the accuracy of an electric clock depends on three things: the accuracy with which it was set to the correct time originally; the accuracy of the pendulum clock in the power house, which is the fundamental control of the system; and the vigilance and care of the operator. On account of the limitations of this system of time-transmission, it can be seen that for maximum average accuracy, an electric

clock in the home of a person on the power network should not be set to the correct time, but (theoretically) to agree with the electric reference clock in the power house, since if his clock should be set correctly when the power-house clock is 30 seconds fast, it will lose 30 seconds when the power-house clock is again adjusted to correct time, and thereafter will remain, on the average, slow by that amount.

The *quality* of frequency control in power plants varies widely in different sections of the country. In some large cities a range of perhaps 20 or 30 seconds is usual. It would be perhaps accurate to say that under the best conditions a 15-second variation from correct time might occur occasionally and under worst conditions a 2-minute variation. It is reasonable to expect, however, that in the next few years these differences will be reduced to considerably smaller amounts.

From these considerations, it is clear that an electric clock will by no means serve the purpose of a person needing to know the time within two or three seconds. Such a person (a watch or clock repairman, for example) must obtain a good pendulum clock which he would compare frequently with a reliable radio time signal. Unfortunately, most radio time signals are not to be relied upon to better than half a minute. The official, and accurate, time signals radiated by the U. S. Government several times daily can be heard only with special short or long wave receiving equipment. The government signals relayed by stations of the National Broadcasting Co. at noon, Eastern Standard Time, are much more accurate than the time signals ordinarily sent out by radio stations during the day and will probably show a variation of less than one-third second from the official time at the Naval Observatory. This is accurate enough for most practical purposes at home or in industry, even in the regulation of high-grade clocks and watches.

Electric clocks may be classified as follows:

1. Non-self-starting. These will stop whenever the current fails, even momentarily, and will not start again until started by hand.
2. Self-starting, with a telltale which indicates whether the current has failed since it was last reset.
3. Self-starting, without telltale.
4. Self-starting, with an auxiliary clockwork which functions during periods of current interruption.

Type 1 is satisfactory only where current interruptions are infrequent, but it has the advantage (which type 2 does not) of showing the correct time whenever it is going (assuming of course that it was set properly).

Type 2 will sometimes serve when current interruptions are more frequent, provided they are of short duration. Of course, when the telltale is up one can never be sure whether the clock is approximately right or has gone far off the correct time.

Type 3 is under no circumstances recommended. If current interruptions are frequent, it will practi-

cally never be on the right time, and if they are infrequent, the owner having formed the habit of depending on it, will do so once too often, perhaps with disastrous results in failing to keep an appointment or to catch a train.

Type 4 is the only kind which can be considered generally satisfactory. This type too has a serious disadvantage in that while it is running during a current interruption, its performance will be that of the lowest grade of mechanical clocks, such as an ordinary alarm clock. Any time lost during the current interruption will, of course, not be regained, so that, after the interruption has occurred, the clock can no longer be considered to be the accurate timekeeper which its owner will assume to be characteristic of a clock on the frequency-regulated power-house circuit. Thus, if the mechanical auxiliary clock which carries on during current interruptions is a poor timekeeper and if current interruptions are frequent and fairly long, the error of the mechanical clock, whether it gains or loses time, will soon accumulate to a considerable amount. This difficulty may be overcome by checking the clock at regular intervals against a reliable pendulum clock or other source of accurate time, such as the noon-broadcast (Eastern Standard Time) time signals. But of course the necessity of such checking, which is unavoidable when current interruptions are frequent and fairly long continued, as they are in many towns and country districts, destroys much of the assumed value of the electric timekeeper. Electric clocks of type 4 could be so designed as to keep accurate time during current interruptions. That they are not so designed is merely an indication that the consumer is unaware of the defect and hence makes no demands on the electric clock's maker in this respect. Faults that consumers do not know about, manufacturers are not inclined to correct.

Electric clocks do have two obvious advantages over mechanical clocks. They need not be wound, and, if current interruptions are short and infrequent, as will be the case in some big city power networks, they will need to be set only occasionally; whereas pendulum or balance-wheel clocks of ordinary quality will require more or less regular resetting to correct time. (See, for example, "Mantel Clocks" in the *Bulletin* of June, 1935.) The large sale of electric clocks at the present time would indicate, however, either that many consumers consider that these advantages outweigh the disadvantages which they have experienced in the use of the clocks, or that they are not aware of the errors and disadvantages of electric clocks in comparison to clocks of the type that must be regularly wound and, in some districts at least, set rather more often than electric clocks.

It is a striking fact that in spite of the extremely advanced state of engineering and science in the electrical industry in general as compared with nearly all other industries, electric clocks, even fairly high-priced ones, are very poor in design, material, and construction. This is partly due to inexperience on the part of the manufacturers and their unwillingness to learn the niceties of design and finish that manufacturers of fine pendulum

clocks have known for a hundred years, and partly to a desire for lowest possible cost of production even in those cases where a good round price is asked for the product. A very few good electric clocks are made, but they are generally very high priced—\$50 and up. Such clocks are made by the Chelsea (Mass.) Clock Co. who have long enjoyed a reputation for making mechanical clocks among the finest manufactured. (These, too, are sold at a high price.) Most electric clocks have soft pivots and excessive bearing clearances, whence they are apt to become noisy in a short time, and many of them will wear out, literally, in a few months. The life of most of them will not exceed a few years (from one year for the poorer clocks under the most favorable conditions, to perhaps ten years for the best of the clocks of the general grades included in the listings which follow). The life is, of course, dependent on local conditions as to dust and corrosive gases in the air, and upon the quality of the oil. When coal is used for heating, the clock will wear out much sooner than with gas heat.

None of the clocks tested was at all comparable with the workmanship of a good French pendulum clock such as may often be bought secondhand, in an old-fashioned case to be sure, for from \$1 to \$5. The plates of electric clocks (like those of cheap American pendulum and balance-wheel clocks) are stamped out of thin sheet metal which makes for poor and unreliable adjustment and short life. The pivots and pinions are not polished as they should be, an omission also making for short life and inaccuracy of timekeeping.

Electric clocks are generally not worth repairing in the present market, as the cost of repairs is apt to be greater than that of a new movement. Watchmakers are, not without reason, prejudiced against them. Some will take them in for repair and return them to the factory. (Repair parts are not commonly available from the manufacturers.) Moreover, the guaranty (which one may regard as practically worthless anyway) will be held void unless the clock is returned to the manufacturer. All this unquestionably produces a very uneconomic situation in respect to electric clock repair and maintenance, apart from the other disadvantages that have already been mentioned.

The cost of operating an electric clock from the power lines, although alleged by some advertisers to be nothing, is in fact appreciable. It is often stated that the clocks do not draw enough current to operate the meter. This may in some cases be true at times when no other current is being consumed, but if any refrigerator motor, radio, electric iron, stove, or other electric appliance or light is in operation, the clock will cause the meter to run faster and tally more energy than it otherwise would. Also, two clocks running simultaneously may cause the meter to operate where one would not. The cost of operation of an electric clock will run from about 5 to 15 cents a month with electricity at 5 cents a kilowatt hour. The cost of electricity used by an electric clock is enough to pay for the regular cleaning and adjusting of a good mechanical clock—which with proper care will last a lifetime, not from one to ten years. Not only is





OF SPECIAL INTEREST TO LIBRARIES

This issue of the *Bulletin* is one of the four *General Bulletins* (not confidential) issued during the year. If you do not wish to retain it for your files, please pass it on to your local library, which may be interested in subscribing. Other *General Bulletins* (which are sent to all subscribers to the combined service) will be issued in January, April, and June, 1937.

The subscription fee for the *General Bulletins* alone is \$1 for the period October through June, and subscriptions are accepted for this period only.

Many school libraries are ordering five and six copies of the *General Bulletin* for their "Consumer Shelves." It is being widely used by students and study groups. Since it is not confidential, it is readily available for reference. For those who were not subscribers last year, the more important articles in the 1935-36 issues are indicated.

General Bulletins

October, 1935:

Practical Buying Tips to Women in Purchasing a Winter Coat, by Robert T. Pullar.

Consumers in Action, a discussion of the lack of protection afforded the consumer by the Consumer County Councils, by Charles S. Wyand.

"Science" to Defend an Unsavory Reputation, the patent medicine men set up a "Scientific Section" to counteract the effect of CR's revelations about some of their products.

CR Tests of Typewriter Ribbons, a report on 30 makes.

Advice on Drawing a Will, by William S. Weiss.

Various Reference Books and Encyclopedias, a discussion and rating of 14 biographical encyclopedias, and 13 encyclopedias of history. 25c

January, 1936:

Ways and Means of Getting Fresh Coffee, a discussion of vacuum-pack, dated coffee, and fresh roasted coffee.

Sources of Lead in Cocoa. The trade explains how it gets in.

The "Better Light—Better Sight" Campaign, The Power Trust Discovers Optometry.

Consumers Get a New "Protector", an evaluation of the former Consumers' Division of the NRA, by Charles S. Wyand.

Clinical Thermometers, a report of Bureau of Standards' tests on 16 brands.

Beware of Endowment Insurance, a careful analysis of the disadvantages of this kind of insurance compared with other types of policies, by William S. Weiss.

CD—Defender of the Consumer? 25c

April, 1936:

Turkish Bath Towels, a report of tests on 16 brands or styles.

Gardening Tools, an expert appraisal of construction and balance of several brands of hoes, rakes, shovels, cultivators, and pruners.

Osteopathy, an evaluation and discussion of this type of treatment, by Paul Luttinger, M.D.

The Adulteration and Manipulation of Wool Fabrics, a description of the various methods used in the trade in combining cotton and other material with wool to cheapen wool fabrics.

Kerosene and Gasoline Lamps, a report on six lamps tested, together with a discussion of the types of lamps to be used and a comparison of their light output and economy. 25c

June, 1936:

Food for the Moths. What precautions to take to prevent moths from getting into your woolens and what chemical preparations to use.

Report on Sanitary Napkins, 15 different brands tested and discussed.

A Consumer Displays a "Lemon", the difficulties of an automobile owner in obtaining an adequate adjustment on an unsatisfactory purchase.

Gas Ranges, a report on 6 makes tested.

Summer Gasolines, a report on 22 brands from all parts of the country.

Mechanical Refrigerators, a report on 8 models tested. 25c

New for Libraries, Schools, and Others

What Advertising Men Say About Advertising—Some interesting and illuminating comments from such well-known leaders as Bruce Barton, Kenneth Collins, and Roy Durstine about their trade. CR, when it criticizes advertising in such frank and outspoken language, is charged with prejudice. This compilation will provide valuable source data for classes and groups studying the social aspects of advertising.

Mimeographed 10 pp. 10c

● GUINEA PIGS NO MORE *by* J. B. MATTHEWS

THE "guinea-pig" days of the American consumer are fast approaching their end. Consumers are becoming painfully aware of the ways in which their pockets have been picked and their health endangered. Mr. Matthews not only presents a useful tabulation of 75 typical gyps current in present-day business practices; he also outlines a positive program of action by which these wrongs can be eliminated, and sets forth a consumers' philosophy to supply the driving force by which this program can be realized.

The American mind resents merely being told what's wrong with the system. Americans want to know what can be done about it. Here is the answer—a challenge to reaction on the one hand and to "worker-revolutionaries" on the other.

Mr. Matthews offers an American method for dealing with problems of social change. He cuts loose from the classical theories of reform by revolution and sets forth the basis for an effective movement of the American consumer in defense of his own rights and wellbeing.

Particularly interesting is his discussion of the drawback from the consumer's point of view of the outstanding example of the workers' state, Russia. The quality of a number of samples of Russian soap, for example,

BY J. B. MATTHEWS
CO-AUTHOR OF "PARTNERS IN PLUNDER"
With an Appendix by Oscar S. Cox

Guinea Pigs NO MORE

This book is the CONSUMER'S MANIFESTO. It contains a summary of the manifold frauds practiced upon consumers, but it goes beyond all of the previous discussions of consumers' problems and, for the first time, makes a reasoned and integrated statement of the political and economic changes needed to bring the living standards of 125,000,000 Americans up to the level made possible by our advanced technology and our human and material resources.

was tested and found to be below U.S. government specifications for milled toilet soap. (See Chapter II, "A Consumers' Society—As an Alternative to a Workers' State.")

Guinea Pigs No More should be on the reference shelf of every course in Consumers' Education and Consumers' Problems. Program directors of women's clubs who are planning to devote part of their year's program to a discussion of the consumer, should read this book before outlining their program.

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Enclosed please find \$_____ in check or money order for which send me, fully prepaid, one copy each of the special CR edition of the books checked. I am a subscriber to Consumers' Research.

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you like meat but have been told that unless sparingly eaten, it is bad for you,

■

milk disagrees with you but you have heard that it would build you up,

■

the juice of bright, evenly-colored, ripe-looking oranges gave you an "after-effect," or at worst a stomach ache,

■

you have been frightened by "acidosis" advertising, and now worry about your "acid-alkali balance,"

■

raw vegetable salads are one of your pet abominations but you believed dietitians' assurances that they were good for you,

■

you have wondered why the bread you buy is such tasteless stuff, and how bakers' cake *could* be so characterless and unpalatable,

Read "EAT, DRINK AND BE WARY"

by F. J. SCHLINK

THIS book is written from the standpoint of the man or woman who must eat the food so lavishly advertised in several colors in women's magazines, so glibly and gushingly described over the radio, or enticingly set forth at the grocery store or restaurant.

The material for "Eat, Drink and Be Wary" came from CR's files. While many of the points covered have been briefly touched upon in CR's *Handbooks* and *Bulletins*, lack of space has hitherto prevented detailed treatment of such topics as bakers' bread, canned foods, codliver oil as a source of vitamin D, food faddery, including the raw fruit and vegetable quackery, the undesirability of milk as a

food for adults, and the commercial bias and unreliability of many of our customary sources of information on food and diet. Although the book is based on a great mass of scientific and technical data, it is simply written so that any reader can understand the points discussed, and will welcome the discovery that his, and his physician's, common sense was a more reliable guide than many a professional nutritionist's elaborate rationalizations.

The special CR edition which is available to all CR subscribers (either to the combined service or the *General Bulletin*) is identical with the trade edition except for jacket and binding (which is green fabrikoid stamped in silver, on stiff covers).

Special CR Edition—Eat, Drink and Be Wary. \$1.00 postpaid

(See page 12b for order blank)



for all subscribers to **CONSUMERS' RESEARCH** Combined Service

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The *Annual Cumulative Bulletin* summarizes so far as possible CR's previous findings on the most important products which consumers buy: razor blades, soap, cosmetics, a wide variety of foods, mechanical refrigerators, and radio sets, for example. It is the consumer's Handbook of Buying which provides him with unbiased and scientific counsel, free from commercial interest or influence of any sort, to guide him in making a choice among dozens of competing brands, each one asserted to be the best. Products are listed by brand name as *Recommended*, *Intermediate*, or *Not Recommended*. The *Annual Cumulative Bulletin* is issued only to subscribers to the Combined Service and is not sold separately.

Consumers' Research, Inc., Washington, New Jersey

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the life of the electric clock short, but it may become intolerably noisy long before it is fully worn out. Moreover, few electric clocks run quietly enough over a long period of time to be satisfactory in the sleeping room of a person who is used to or requires the quiet of a house in the country.

Most electric clocks have an entirely inexcusable lack of protection against dust entering the case. This is a most important point since the life of any clock is greatly impaired by the penetration of dirt into the works, and the effect of such dirt upon the condition of the lubricant.

It is doubtful whether it is ever advisable to use an electric alarm clock unless it is of type 4 already described. Sooner or later a failure of the power supply will bring it about that the sleeper will not be awakened at the expected time.

The examinations and tests briefly summed up in the following listings cover most of the low-priced brands of the electric clocks on the market at the time the tests were begun, with the exception of the non-approved type 3, lacking a telltale device. One of these, however, was included because of its unique construction. The tests included checking fire hazard and shock hazard in accordance with the Canadian specifications of 1933. No such hazard was found in any case. A test of the insulation was carried out by applying 880 volts a-c between the live parts and the metal parts for one minute after immersion of the clocks in live steam for ten minutes. Under this test no breakdowns occurred. The clocks were run continuously for three months and then completely disassembled and examined microscopically for wear and structural defects. ¶ In all cases the wattage ratings were conservative, i.e., the power actually consumed was less than the rating marked on the case; the marking was satisfactory, too, in form, except in one instance.

In the following ratings no consideration was given to external appearance since a wide variety of cases is available for the various movements. In each case only one specimen of a given make and type was tested. It should be noted, however, that with minor differences the same movement appears sometimes in a variety of case designs. Ratings refer to a-c clocks; all are cr 36.

B. Intermediate

Hammond Bichronous (The Hammond Clock Co., 2915 N. Western Ave., Chicago) \$16.50. Current consumption 29.5 milliamperes. Wattage rating 3. Type 4 clock; provided with auxiliary motive power which will run the clock for half an hour in case of power failure. Provided with dials indicating the day of the week and the day of the month; the latter must be set ahead one day by hand at the end of the 30-day months. This was the only clock examined in which the protection against dust was deemed entirely satisfactory. It was exceptionally quiet in operation, principally because the faster-moving wheels run in non-metallic bearings. These bearings showed appreciable wear at the end of the test. Except for this, the clock would have been rated *A. Recommended*. The manufacturer states, "The Bichronous clock is a patented device which belongs exclusively to the Hammond Clock Company." This statement is likely to be interpreted by the layman as meaning that other clocks do not have the auxiliary power system.

B. Intermediate (contd.)

The statement in fact properly refers only to the particular design of the supplementary power system used by Hammond which, as regards timekeeping ability, was not superior to others.

Telechron Alarm (Warren Telechron Co., Ashland, Mass.) \$4.95 to \$9.95. Current consumption 17 milliamperes. Wattage rating 2. Type 2, self-starting clock with telltale device. All *Telechron* motors are true synchronous motors, that is, the rotor makes a complete rotation for every current cycle. This design is of doubtful advantage since it involves a more delicate mechanism and a large gear reduction, amounting in the 60 cycle models to a reduction of 3600 to 1 between the motor and the gear which drives the second hand. The fast-moving parts are sealed into a metal cylinder. Repairs are thereby prevented (but would be uneconomical in any case). Dust cannot reach the more delicate, fast-moving parts and a good supply of oil at the important bearings is assured.

C. Not Recommended

Hammond Alarm. \$4.95; others \$3.50 to \$9.95. Current 17 milliamperes. Wattage rating 2. Type 1, non-self-starting clock. This clock is nearly equal in construction to the *Bichronous* model, and would receive the same rating, except that the works are insufficiently protected against the entry of dust. Wear was appreciable.

Sessions Alarm (The Sessions Clock Co., Forestville, Conn.) \$4.75; others \$4.50 to \$5.25. Current 15.5 milliamperes. Wattage rating 2. Type 1, non-self-starting. Stated by the manufacturer to be "made of the finest materials and by expert American workmen and can be expected to give the maximum in satisfactory service." Hardly any element of this statement was true. The motor had insufficient power and would stop on slight provocation. Some expertness was required in starting it, since the rotor had to be rotated by hand at close to the right speed before it would run. There was a considerable excess of friction in the hands, making it difficult to set the clock properly. As the hands could not be turned backward, it generally happened that one had to turn them all the way around the dial several times before obtaining a satisfactory setting. Dust protection insufficient.

Sessions Mantel. \$6.50. Current consumption 15.5 milliamperes. Wattage rating 2. Type 1, non-self-starting. The same remarks (as for the *Sessions Alarm*) on insufficient power apply to this model. The hands, however, could be turned backward, when setting was somewhat easier. This clock had some tendency to run at half speed, which may have happened due to a surge on the line which, if it was the cause, was insufficient to disturb any of the other clocks. When this happened, the clock would, of course, lose 12 hours a day. Although this clock was sold for \$6.50, the construction was in all respects comparable to the clocks which a year or so ago were selling for about \$1, an example perhaps of a manufacturer's willingness to charge what the consumer will pay and the consumer's willingness to pay a higher price on the mere assumption that higher price is somewhat related to better quality. The particular brands of clocks which formerly sold at around \$1 are now practically unobtainable; which is possibly because so many complaints were received that most stores have stopped selling them. The minute hand of the *Sessions Mantel* had a quite exceptional amount of backlash, about one minute, so that if the clock were right during the first 30

C. Not Recommended (contd.)

minutes of the hour, it would be one minute slow during the last 30 minutes.

Ingraham Alarm (The E. Ingraham Co., Bristol, Conn.) \$2.75. Current consumption 14.5 milliamperes. Wattage rating 2 to 3. Type 1, non-self-starting. Became noisy on the 47th day of operation, a defect which hardly comports with the Ingraham claim, "Ingraham Electric Clocks are born with a valued heritage of more than a century of clock-making experience." Dust protection insufficient. Wear was considerable.

Telechron Auxiliary. \$16 and \$20. Current consumption 21.5 milliamperes. Wattage rating 2. Type 4 clock; the auxiliary mechanism worked only on the minute and hour hands, the second hand not moving during current interruptions. After 90 days of normal running the escapement of the auxiliary mechanism was so clogged with dust that it failed to run when the power went off.

Ingraham Wall Clock (The E. Ingraham Co.; similar clocks distrib. Montgomery Ward & Co., Cat. Nos. 45 C 945-946 at \$1.98 plus postage) \$3.50. Current consumption 16 milliamperes. Wattage rating 2 to 3. Type 1, non-self-starting. Dust protection insufficient. Wear considerable.

Westclox Wall Clock. \$3.50; another priced \$2.95. Current 17 milliamperes. Wattage rating 1.7. Type 1, non-self-starting. Dust protection insufficient. Wear considerable.

Revere Mantel Clock with Westminster Chime. Purchased at department store for \$13.99; regular price asserted to be \$19.98. Current consumption 20.5 milliamperes. Type 2, self-starting with telltale device. Uses *Telechron* motor. Chiming mechanism unneces-

C. Not Recommended (contd.)

sarily complicated, and poorly made. The hammer arms were so light in design that they bent upon impact, producing poor chiming. In addition to this defect, the quality of chime tone was considered by several persons to be unsatisfactory.

Seymour Jump Hour. \$12.50. Current consumption 13 milliamperes. Wattage rating 2. Type 3, self-starting without telltale device. This clock works on the principle of the mileage indicator (odometer) on an automobile speedometer, the time being indicated not by hands but by dial figures on the edges of drums, visible through the window. This clock's construction was very poor, resulting in its stopping on the 15th day of the test. Examination showed that the inner rotor pivot had worn a hole through the thrust bearing, which consisted of a thin aluminum plate, about the worst bearing material that could have been chosen. Maker's name and voltage and wattage ratings were stamped on a paper seal pasted to the bottom of the clock (contrary to Canadian electrical specifications calling for permanent marking with the manufacturer's name . . . and rating as to volts, a-c or d-c, frequency if for a-c).

Westclox Alarm. \$2.50. Current consumption 16 milliamperes. Wattage rating 1.7. Type 1, non-self-starting. Dust protection insufficient. Wear considerable.

Also not recommended, as implied by the preceding discussion, are all self-starting clocks of whatever make that do not have a telltale device to indicate whether the current has failed since the clock was last reset, and which lack auxiliary clockwork to function during periods of current interruption.

Antifreeze Solutions for Automobile Radiators

IN VARIOUS REPORTS, CR has from time to time dealt in detail with antifreeze solutions for automobile radiators. Briefly, it may be repeated that while a perfect antifreeze has not yet been found, the most practical ones are certain *alcohols* of which ethyl (grain) alcohol and ethylene glycol are probably the best so far used. Although ethyl alcohol evaporates far more rapidly than ethylene glycol and must be replenished as evaporation occurs, a small car which has no leaks in hose, pump, or radiator, and which does not overheat through hard driving or hard climbing on warm days, can with average driving go through a northern winter with three gallons of 188 proof denatured ethyl alcohol costing about 65 cents per gallon. As with the more expensive and more permanent antifreezes, though somewhat less effectively, the cost for succeeding years may be reduced by withdrawing the solution from the radiator at the end of the winter season and saving it in corked cans or jars for subsequent use. In case of such re-use, the diluteness of the alcohol-water mixture, when it is put to use again, should be carefully tested with an hydrometer, in order that the amount of alcohol present may not unwittingly have become reduced below the point of safety. Alcohol can, we believe, be used more safely than glycerin or ethylene glycol in radiators which have had small leaks repaired with such powders and liquids (flaxseed meal or flaxseed extract) as are often used to seal off bad joints in the radiator or small cracks in the engine water jacket.

There is an advantage in adding a half-and-half mixture of ethyl alcohol with ethylene glycol to the radiator water instead of ethyl alcohol alone. This mixture is not only cheaper than ethylene glycol and water but it has the important advantage that a higher temperature (obtained by a higher thermostat adjustment) can be used than when ethyl alcohol and water alone are used in the radiator. The higher temperature for the cooling system gives greater efficiency in gasoline consumption and helps to maintain engine efficiency for a longer period and increases the engine's life. A car heater of the hot-water type will be more effective at the higher jacket water temperature. Denatured ethyl alcohol used for antifreeze may be either "completely denatured" or "specially denatured." Methanol (5 percent by volume) may be used as the denaturant for the latter but not for the former, and if present in amounts greater than 15 percent must be so stated on the label. Both types of denatured alcohol are recommended with the understanding that care should be taken to avoid, so far as possible, bodily contact with them and inhalation of their vapors. Ethylene glycol (*Eveready Prestone*), although it gives "permanent" radiator protection, is expensive. Furthermore, it requires care to ensure that there are no leaks in the cooling system, since it can leak from a system that appears to be quite tight for water. Glycerin is another "permanent" antifreeze but, like ethyl alcohol and glycol, is expensive and will leak easily from a system that

would otherwise appear to be quite watertight. It is rather more likely than the other substances described to cause corrosion of parts of the cooling system. Neither glycerin, because of its high viscosity at low temperatures, nor alcohol because of its low heat capacity and high volatility should be used in thermo-syphon (non-pumping type) cooling systems. Methanol, which is the modern synthetic wood alcohol, is the kind of alcohol one usually gets when asking for denatured alcohol for antifreeze purposes. It is cheaper, but wholly unsatisfactory because of its low boiling point and is extremely poisonous. Even inhalation of its fumes, often noticeable in the car when driving in winter, is fraught with a hazard that must not be taken lightly. In order to favor the low-boiling-point of methanol (made mainly by the du Ponts, who also control large automobile manufacturing interests), automobile thermostats are commonly adjusted to give lower engine operating temperatures than demanded for the efficient operation of the engine and of the most favored types of car heaters.

Commercial brands of antifreeze solutions are, of course, often given a trade name which does not reveal the character of the liquid itself. Usually they consist of one of the substances named above, or a mixture of two of them, with perhaps a little oil or other rust inhibitor (which will probably on the average be of small value in that respect) and some coloring matter added. The solutions of salts such as calcium chloride, which used to be widely sold, cause such prompt and extensive radiator and engine damage that their sale has been greatly reduced. Kerosene, sometimes used, is hard on the rubber hose and involves serious fire hazard in case of an engine's overheating. Since there are on the market so many solutions which must be avoided, consumers should not assume the risk of purchasing antifreezes whose constituents are unknown.

The following listings are from results of tests recently made for CR. Ratings are cr 36 unless otherwise noted. Price ratings are based on the cost of protection for a five-gallon radiator down to 0°F, i.e., the volume of antifreeze needed multiplied by the cost per unit of volume, without attempting to allow for cost of renewal of the liquid to compensate for evaporation, leakage, and other losses. Such losses vary widely with climate, customary conditions of operation of the car, thermostat adjustment, degree of dilution of the antifreeze liquid, frequency of occurrence of warm days during the normally cold season, etc. Prices, of course, vary somewhat with locality, dealer, and quantity purchased. A "five-gallon system" corresponds approximately to the cooling water system of the Ford V-8, the Packard 8 and the Hudson 8 cars.

A. Recommended

Protectol (Carbide & Carbon Chemicals Corp., 30 E. 42 St., N.Y.C.) 65c per gal. Cost of protection to 0°F for 5-gal system, \$1.25. Found to be mainly denatured ethyl alcohol. **1**

Super Pyro (U. S. Industrial Alcohol Co., 60 E. 42 St., N.Y.C.) 65c per gal. Cost of protection to 0°F for 5-gal system, \$1.15. Mainly denatured ethyl alcohol. **1**

A. Recommended (contd.)

Whiz-Klear-Flo (R. M. Hollingshead Corp., Camden, N.J.) Mainly denatured ethyl alcohol. pt 36

Mobil Freezone (Socony-Vacuum Oil Co., Inc., 26 B'way, N.Y.C.) \$1 per gal. Cost of protection to 0°F for 5-gal system, \$1.75. Contains some methanol as a denaturant, and a little kerosene as a rust preventive. **2**

Eveready Prestone (National Carbon Co., 30 E. 42 St., N.Y.C.) \$1.60 for ½ gal. Cost of protection to 0°F for 5-gal system, \$5.20. Mainly ethylene glycol with a little added oil. **3**

C. Not Recommended

Winter-Flow (Carbide & Carbon Chemicals Corp.) 25c per qt. Principally methanol. **1**

Zerone (E. I. du Pont de Nemours & Co., Wilmington, Del.) \$1 per gal. Principally methanol. cr 35 **1**

General Motors Permanent Antifreeze (General Motors Parts Corp., Detroit) Mainly glycerin and 25% water. pt 35

G P A Radiator Glycerine (Swift & Co., Chicago) \$1 per gal. Cost of protection to 0°F for 5-gal system, \$3.20. Mainly glycerin and water. **2**

Permatex Alcohol Glycerine Anti-freeze (Permatex Co., Inc., Sheepshead Bay, N.Y.) \$1.25 per gal. Cost of protection to 0°F for 5-gal system, \$2.80. Sample found—in spite of name, which suggests a substantial proportion of glycerin—to be mostly denatured ethyl alcohol (not worth \$1.25 a gal), with a little glycerin added. Contains some methanol as a denaturant. cr 36+ad **2**

Super Service (Distrib. Sears, Roebuck & Co.) 63c per qt, purchased from retail store. Cost of protection to 0°F for 5-gal system, \$4.75. Probably a mixture of higher alcohols, such as ethylene glycol and glycerin. **3**

Auto Top Dressings

With the advent of "turret" automobile tops, the problem of a satisfactory top dressing will disappear for the owners of cars so equipped. Nevertheless, the owners of such cars should not assume that their thin sheet steel tops will require no attention at all. Such tops, being continually exposed to the action of sun and rain, will require more frequent rewaxing to protect and preserve their finish. However, the majority of the cars on the road today have fabric tops, and, in view of the numerous inquiries received for information on this subject, tests of several brands of dressings have been carried out.

Thirteen of the sixteen brands tested were very poor; in fact, in some cases the differences were very greatly in favor of the untreated top. Some of the top dressings not only cracked and peeled badly, but, in peeling, damaged the top material itself, underneath. It was found that the most satisfactory top dressing from the standpoint of durability and economy was aluminum paint, mixed as described on p. 16. This paint not only makes an excellent top dressing, but lowers the temperature inside the car by an appreciable amount in hot weather.

The following ratings are based on exposure tests of sections of new top covering material, stretched on a framework and exposed to the weather, with one panel left untreated as a control. The dressings were in each case applied in accordance with the manufacturers' instructions. Prices are per pint,

and, unless otherwise noted, are for black finish. All ratings are cr 36.

A. Recommended

Aluminum paint, made by mixing 4 oz of commercial paste aluminum in 1 pt of long oil spar varnish. Gave excellent performance. (Long oil spar varnishes are those having a high ratio of oil to resin. They dry slowly giving an elastic film. Any old-fashioned paint shop can provide such a varnish. But don't expect a drug store or 10-cent-store paint counter to do so.)

No. 7 Auto Top Finish (E. I. du Pont de Nemours & Co., Inc., Detroit) 75c. Gave excellent performance.

C. Not Recommended

Wards Riverside, Cat. No. 61—9679 (Distrib. Montgomery Ward & Co.) 55c.

Lincoln M-255B (Lincoln Motor Co., Division of Ford Motor Co.) 80c.

Sco-co (The Southern Cotton Oil Co., Savannah, Ga.) \$1.

Sco-co Clear (The Southern Cotton Oil Co.) \$1.

Benite (The Bens Chemical Co., Jackson, Mich.) 75c.

Du Pont Thickote (E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.) 75c.

Davis Enamo (Distrib. Niagara Fabric Mfg. Co., Inc., 569 B'way, N.Y.C.) 70c.

Protection Clear (The Protection Products Co., Kalamazoo, Mich.)

Saharid (Western Auto Supply Co., Kansas City, Mo.) 72c.

Tip-Top (The Thompson Specialties, Inc., Springfield, Mass.) \$1.

Top-Tite (Boston Varnish Co., Boston) 80c.

Sherwin-Williams (The Sherwin-Williams Co.) 75c.

Varsity Clear (Varsity Products Co., Wilmington, Del.) 59c.

Whiz (The R. M. Hollingshead Co., Camden, N.J.) 75c.

Sole Protectors

TEN-CENT STORES and some hardware stores, especially in small towns, for several years back have been selling large numbers of a product called "sole-saver" or "sole-protector" stick-on soles, designed to be applied to leather, composition, or rubber soles so as to delay their wearing out or to give the sole a new lease of life after it has worn through. The "sole-savers" are applied with rubber cement after cleaning and roughing-up the surface of the shoe sole in accordance with directions supplied with the "sole-saver." These sole protectors as found on the market today are far less durable than a good sole protector should be or, in fact, used to be, as a leading sole-protector manufacturer put it, before "the price war [was] on." There is no good reason why a protector made of good quality materials and of adequate thickness should not be made and sold at a moderate price and provide its user with twice the amount of service per cent of price now given by the present low-quality soles produced under a pure profit-competition, in which there appears to be practically no element of competition in quality.

Thirteen brands of attachable rubber (cement-on) and composition (nail-on) soles were subjected to tests for springiness, hardness, and durability and, in the case of the cement-on soles, to a test for adhesion when attached according to directions

with the cement supplied. Several of the brands were also given a practical test of actual use, to determine how long they would last under ordinary conditions of wear, and if they would remain attached satisfactorily. A considerable range of difference among the various brands was found in resistance to abrasion, amount of service to be expected for each cent of purchase price, strength of adhesion, and springiness. When used regularly, under average conditions of wear, some of the better soles were found to give normally two to three months of daily wear (for a person not doing more than a limited amount of walking daily) before they wore through either in the middle or around the edges. When worn by a person giving them severe use, their life was only a month. Some of the poorer soles, on the other hand, afforded only five to six weeks of wear in light service, corresponding to, presumably, about two weeks under the severe service demanded by a person working outdoors and walking a great deal. In the test in which the soles were worn by members of CR's staff, about one pair in six, regardless of brand, gave trouble by becoming detached from the shoe before wearing through. In the September, 1936, *Annual Cumulative Bulletin*, CR has given a number of points that will aid the consumer in applying such soles successfully.

Three brands of soles, designed to be nailed on, or cemented and nailed on, and intended for heavy-duty service, were of a composition having considerably less springiness than most of the rubber-compound soles and were about twice as thick. As soles of the type requiring to be nailed on call for the use of a shoemaker's iron last, they are not so readily attached by the user as the cement-on type.

Complaints have been received that certain composition soles and heels made black marks on wood floors, difficult to remove. This defect can be detected before accepting a cobbler's work by rubbing the edge of the sole under heavy pressure over a board, table top, or similar surface.

All ratings are cr 36; all three soles in the *A. Recommended* groups, and in addition, the *Savet*, and *Wards Black* fall in price group 1 on the basis of economy in use—in terms of sole life per cent of purchase price.

Rubber-Compound, Cement-on Type

A. Recommended

Auburn Super Triple Wear (Auburn Rubber Corp., Auburn, Ind.; distrib. S. S. Kresge Co. and G. C. Murphy Co.) 15c. Thinnest sole tested. Adhesion strength of sole and cement and general performance good.

Wards Gum, Cat. No. 84—8665 (Brown Rubber Co.; distrib. Montgomery Ward & Co.) 15c plus postage. Next to thickest sole tested. Adhesion strength of sole and cement somewhat low, but springiness and resistance to abrasion best of all stick-on soles.

B. Intermediate

Auburn Super More Wear Boot Size (Auburn Rubber Corp.; distrib. S. S. Kresge Co.) 15c. Adhesion strength of sole and cement somewhat low, but resistance to abrasion good.

Bonded (Rainbow Rubber Co., Butler, Pa.; distrib.

B. Intermediate (contd.)

F. W. Woolworth Co.) 20c. Adhesion strength somewhat low, but resistance to abrasion good.
Savet (Auburn Rubber Corp.; distrib. G. C. Murphy Co.) 10c. Adhesion strength and resistance to abrasion fair.

C. Not Recommended

Daisy Blue Ribbon (Schacht Rubber Mfg. Co., Huntington, Ind.; distrib. F. W. Woolworth Co. and J. G. McCrory Co.) 10c. Adhesion strength highest of all soles tested, but resistance to abrasion poor.
Grant (Distrib. W. T. Grant Co.) 10c. Adhesion strength lowest of all soles tested, and resistance to abrasion poor.
Stik-on (Rainbow Rubber Co.; distrib. F. & W. Grand-Silver stores) 10c. Resistance to abrasion poorest of all soles tested.
Stick-on Soling Slab (Distrib. F. W. Woolworth Co.) 5c. Resistance to abrasion poor.
Wards Black, Cat. No. 84-8550 (Brown Rubber Co.; distrib. Montgomery Ward & Co.) 7c plus postage. Resistance to abrasion poor.

Composition, Nail-on Type**A. Recommended**

Wards Heavy Duty, Cat. No. 84-8557 (Distrib. Montgomery Ward & Co.) 17c plus postage. Resistance to abrasion best of all 13 soles tested. For nailing on only. Nails not furnished.

B. Intermediate

Arco (Auburn Rubber Corp., Auburn, Ind.; distrib. Sears, Roebuck & Co. retail store) 19c. Resistance to abrasion fair. Nails and cement furnished.

C. Not Recommended

Daisy (Schacht Rubber Mfg. Co.; distrib. F. W. Woolworth Co.) 20c. Resistance to abrasion poor. Nails and cement furnished.

Rubber Heels

A SATISFACTORY DEGREE OF SPRINGINESS, or cushioning ability, and good resistance to wear are usually considered to be the important requisites of a good rubber heel. While these qualities are to some extent incompatible in that, for instance, a heel most resistant to abrasion will not be the most springy, nevertheless a very yielding heel, if properly made, will have good wear resistance. The springiest heel found had a resistance to wear well above average—almost twice that of the least durable heel (which also had much less cushioning effect). Several brands of heels gave both poor cushioning effect and poor resistance to wear. The results of the test, therefore, will enable the consumer to select rubber heels having the greatest durability or the maximum cushioning effect, combined with satisfactory durability, and to avoid those heels lacking such requisites. A rubber heel is less noisy, more springy, and gives longer wear

than a leather heel, but the springiness may be regarded as of no particular consequence to health, for the orthopedists, we judge, for the most part show no preference for either the rubber or leather heel.

The decrease in resistance to wear which accompanies aging of the rubber compound, a factor of some importance, was determined by making comparative measurements of abrasion rate both before and after an accelerated (hot air) aging process, by means of an abrasion machine specially designed for this work. Several brands were found to lose their resistance to abrasion much more rapidly than others, wearing away nearly twice as fast when aged as when new. There is therefore a real point in buying rubber heels from a dealer whose stock, due to rapid turnover, is likely to be fresh. Springiness and hardness were determined by instruments designed for measuring those qualities. All ratings are *cr* 36.

Price ratings are on the basis of economy in use in terms of heel life per cent of purchase price.

A. Recommended

Auburn, Cat. No. 25-9801 (Auburn Rubber Corp., Auburn, Ind.; distrib. Sears, Roebuck & Co.) 13c plus postage. Springiest heel tested; durability good. **1**
I.T.S. (The I.T.S. Co., Elyria, Ohio) 25c. Springiness poor; durability best of all heels tested. Would warrant a *B. Intermediate* rating for people who consider springiness of relatively greater importance than durability. **2**
Goodrich Lifelong (B. F. Goodrich Rubber Co., Akron, Ohio) 35c. Second best in springiness; durability good. **3**
Goodyear Wingfoot (Goodyear Tire & Rubber Co., Inc., Akron, Ohio) 30c. Fairly springy; durability good. **3**
Hood Arrow (Hood Rubber Co., Inc., Watertown, Mass.) 25c. Fairly springy; durability good. **3**
Seiberling (Seiberling Rubber Co., Akron, Ohio) 30c. Deficient in springiness; second best in durability. Would warrant a *B. Intermediate* rating for people who consider springiness of relatively greater importance than durability. **3**

B. Intermediate

O'Sullivan's (The O'Sullivan Rubber Co., Inc., Winchester, Va.) 15c. Springiness fair. Resistance to abrasion fair when new, but aging properties poor. **3**

C. Not Recommended

Reliance, Cat. No. 84-8584 (U. S. Rubber Co., 1792 B'way, N.Y.C.; distrib. Montgomery Ward & Co.) 8c plus postage. Springiness and durability poor. **1**
Akron, Cat. No. 25-09810 (Distrib. Sears, Roebuck & Co.) 9c plus postage. Springiness and durability poor. **2**
Master-tread (Distrib. F. W. Woolworth Co.) 10c. Springiness good; durability poor. **3**
Wards, Cat. No. 84-8580 (U. S. Rubber Co.; distrib. Montgomery Ward & Co.) 13c plus postage. Springiness and durability poor. **3**

Fountain Pens

General Notes on Selection and Care

LITERALLY MILLIONS OF FOUNTAIN PENS have been sold whose quality is so bad that they hardly function effectively for a week after they have gotten into the purchaser's hands. The general design of fountain pens is so familiar and the differences which determine good performance so subtle that it has been easy for drug stores, variety chain stores, novelty shops, and mail-order concerns to make many millions of dollars by selling to school children and other inexperienced consumers a product of which it might be accurately said that it only *looked* like a functioning fountain pen. For the past several years CR has consistently purchased samples of many makes and grades of fountain pens, particularly the various types—both for pocket and desk use—which it has found available at low prices. Until the last few months, these have been uniformly bad, developing some fundamental defect sometimes within a day or two of their purchase. Frequently that defect is simply that the pen will not write and cannot be made to write. The cause has usually been chemical interaction between the ink and the pen point, sometimes between the ink and the material of the barrel.

Very recently a number of interesting developments have occurred in the design and production of low-cost fountain pens, and really cheap pens are beginning to be available that show performance as good as and occasionally better than some of the widely-advertised kinds that sell at prices from \$3 up.

One of the most promising low-cost fountain pens, which is worth the average consumer's trying but cannot yet be unqualifiedly recommended, is a pen recently offered in Kresge's stores and bearing the ambitious name *La Ritzie*. This uses an entirely new mode of reducing cost—a solid-gold-alloy point, of low gold content to be sure (being only ten carat), cheapened by being made very thin (as are most low-priced pens), but then given suitable writing stiffness, very necessary to assure durability in service, by a well-designed backing-plate of stainless steel alloy. This make, while far from being the worst in this respect, has, like many other cheap pens, only a small ink capacity. The iridium-tipped nibs of a number of *La Ritzie* pens that have been tried have been exceptionally good and show surprising uniformity—a feature in respect to which most cheap pens have been very unsatisfactory. Indeed, the nibs of these 39c *La Ritzie* pens, for anyone who likes a fairly stiff point, will be found, on the average, better and smoother than most brands of high-priced pens.

There are two respects, however, in which this new cheap pen should be considered with caution. First, it appears that the seat upon which the pen section seats in the cap when the cap is screwed down, may not permanently provide a tight seal. Second, a few of the pen points in a number examined have shown an undesirable sidewise loose-

ness of fit in the holders which the inexpert user would have greatest difficulty in remedying. However, it seems safe to say, considering the way in which 10-cent-store products are now gradually improved in design and functioning over a period of months or years, that this pen, which is well finished exteriorly and comparable in appearance with much higher-priced products, will bear watching by consumers who wish the most fountain pen for the least money.

There is a somewhat newer pen than the *Esterbrook* listed as *A. Recommended*, and much the same in type, which in some respects is even more desirable than that brand. CR has not yet, however, had sufficient experience with this new pen, the *Monitor* (a product of the Wahl Co.), to place it definitely in the *A* group. Like the *Esterbrook*, it uses a replaceable pen point section by which the whole pen and feed can be unscrewed and replaced as a unit when the pen has worn or when it has been bent or spoiled through accident. The stainless-alloy point is an exceptionally satisfactory and durable one of rather blunt shape, almost in the stub pen class. This new pen is of the "one stroke," pump-filling type with transparent barrel of very large ink capacity. Selling at \$1, it has thus far given a very good account of itself in practical use. Its point, like that of the *Esterbrook*, shows no sign whatever of depreciation by corrosion; nor has its pump filler shown signs of developing leakage, though that has been in the past a common defect of pump-filling pens of this general type, in which a tightly fitting disc or piston moves in the cylinder constituting the barrel of the pen.

The so-called iridium tips on fountain pens are not actually iridium. Pure iridium is much softer and less suitable for the purpose than a natural or synthetic osmium-iridium alloy (which also contains some other metals of the platinum group). There is, therefore, so far as the consumer is concerned, no effective misrepresentation in the labeling of pens as carrying iridium tips on their nibs when an equally or more desirable substance is in fact used. It is quite likely that there is a wide variation in the resistance to wear of the different types of "iridium" points available on different makes of pens, but it is doubtful whether research on this question would reveal information of sufficient practical importance to the consumer to warrant the expenditure.

The development of the low-priced pen has followed two lines. First, various attempts to use a non-precious metal for the pen proper to get around the high cost of gold pens. This development in turn has had two variations. In one of these, various sorts and grades of stainless-steel-alloy are used for the pen point, usually with a crude smooth-pointing of the pen in the manner of the old-fashioned ball point steel pens. These would have proven very satisfactory except that in practice manufac-

turers have taken little care to obtain properly shaped, smooth-writing nibs on the pen. The second development is more recent, and consists of putting on stainless-alloy pens genuine "iridium" tips such as are used on fountain pens employing a gold pen. Such tips are capable of being smoothly rounded and given a fine polish so as to provide precisely formed and durable writing points.

Unfortunately, at the present stage of the art of manufacturing cheap fountain pens, many mistakes are made and a good and durable point is often combined with an extremely bad feed, cap, or filling mechanism, so that the consumer who does not have a considerable degree of ingenuity in analyzing the defects which his fountain pen may develop, may become quite unnecessarily discouraged in his efforts to find a cheap and at the same time, lasting fountain pen. In addition to the defects of design, there have been used in fountain pen manufacture an amazing variety of expedients that can only be called fraudulent. These are too numerous to list here, but a few may be indicated. With the developing vogue for pens of very large ink capacity, which is discussed elsewhere in this article, a number of makers of low-grade fountain pens have brought out cheap, pump-filling pens of large capacity, practically all of which rely for their sales upon that one new feature which had caught the public mind for the moment, and were in all other respects practically unfit for any use whatever. A cruder trick was the stamping of a gold-plated brass pen point with the symbol "14 K," the manufacturer's explanation being that 14 K was a catalog or type number. Sometimes the word iridium has been falsely associated with the fountain pen when no iridium point was in fact used. The ring or seat in the cap, which provides for sealing the pen, when the cap is screwed down, against leakage from the point, is often missing or added in such a way as to be ineffective, merely giving an appearance of such a seat being present. The use of names which resemble well-known names is a common trick with fountain pens as it has been in the past with watches. *Schafner* and *Waterson* have both been used in this way.

The use of celluloid and other unsuitable compositions in the manufacture of pen barrels has brought it about that many of the cheap pens react chemically with the ink in such a way as to plug the feed with precipitated solids constituting the pigmenting material of the ink. This fault in a fountain pen having a celluloid type barrel is impossible to correct when it occurs with good ink of the gallotannate type (the common type of ink which writes blue-black and turns to a darker color with exposure, recommended by Consumers' Research in various Handbooks—e.g., *Handbook* of Mar. 1932). Such pens may work with a fair degree of satisfaction with some types of dye-inks, of purple, green, brown, etc. (which have been made increasingly popular by attractive advertising but are really very unsatisfactory on a number of counts). Nevertheless, there is no excuse for the production of any pen which does not work perfectly with the good gallotannate type ink, without causing any

deterioration, "wateriness," or precipitation of the ink whatever.

The Guaranty Problem. The subject of fountain pen guaranties has become a problem in itself. Misrepresentation customary in advertising and in dealers' shops impresses the prospective customer with the value of guaranties, which the pen buyer assumes, on account of what the advertising doesn't tell him, will assure him free repair and replacement of parts of the pen throughout its life; these misleading guaranties are interesting enough to warrant treatment in a separate article. For the purpose of the present discussion, let it suffice to say that the consumer will do well to ignore the assurances of the guaranties, however sweepingly expressed, and buy his pen on other information exclusively, having in mind that, as with automobiles and automobile tires and most other articles accompanied by some sort of warranty, a way will be found by the dealer or the manufacturer when a difficulty develops, to avoid responsibility for fulfillment of the guaranty in the sense in which it is understood by the purchaser. The fountain pen and tire manufacturers' guaranty is, as one subscriber well put it, good so long as one does not use it. When it comes to a showdown, the actual cost of repairing the "guaranteed" pen carrying the warranty of free service for an indefinite period will be just about the same as, though no such guaranty were given. Only a lawyer's experience with the possible tricks in the framing of agreements suffices to suggest the number of ways in which clauses which seem perfectly logical and honestly meant to the consumer, turn out to have had a very special, narrow, and legalistic meaning to the man who wrote the guaranty.

One word of advice. Practically all fountain pen advertising picks on some small feature—such as the color, pattern, or transparency of the barrel, its large ink capacity, the size and he-mannishness of the point, or some patented feature affording a special and unimportant adjustment—and magnifies it to astronomical values. The wise consumer will remember that what one really asks of a fountain pen is very little; that not one nor a few, but many brands and types of fountain pens substantially comply with those requirements. CR will continue to watch fountain pens closely, especially in the lower price ranges, where the best values are now to be found, and its readers may be assured that when important and dependable new features really are available, CR's *Bulletin* will tell of them. Since the discussion on fountain pens was omitted, for lack of space, from the *Annual Cumulative Bulletin* for September 1936, significant items of information from the *Handbook* for September 1935 follow.

For ordinary use the average "standard make" fountain pen should last a lifetime, so far as the mechanics of the pen are concerned. Most discarded pens can be made nearly as good as new at trifling cost. If expert and conscientious repairmen are not near, send directly to the maker. Almost any reputable make should give 5 or 6 years of uninterrupted service, the first failure being the rubber sac, which may cost 25 cents.

Important Precautions. Use only one brand and color of ink in a given pen. We cannot overemphasize the fact that a great deal of fountain pen trouble grows directly or indirectly out of using more than one brand, type, or color of ink in a pen. Much fountain pen "repairing" (in the case of obstinate refusal to feed ink freely) consists of nothing more than really thorough and complete cleaning out of old ink residues. *Ordinary washing is not sufficient to avoid this difficulty.* It usually takes successive washings for several days with dilute household ammonia and cold water to get a pen back to the point where a new ink flows with the ease with which a previous ink did before a change. Keep some ink of the brand you are using everywhere you work. When a pen is not to be used for a while, fill with cold water and put cap on tight.

Nibs. Because the flexible nib works better than do other nibs when a pen has had a mixture of inks in it, flexible nibs are likely to be favored. But far greater smoothness and writing quality will be obtained with an inflexible or "manifold" pen, which offers the advantage that one or two satisfactory carbon copies can be made from the pen-written original. The stiff-nib manifold pen will give an unusual amount of difficulty with clogging and failure to feed promptly for any user who will not follow to the last detail the above precautions in the use of inks. The manifold points are far more durable and immune to mistreatment, *except ink-mixing* and ink-contamination. "Semi-flexible" nibs are an attempt to combine the desirable features of both types. Some persons, it may be noted, require flexible or semi-flexible points for their style of handwriting and for comfort in writing. To some degree, flexibility of point may lighten the work of continuous writing, because a flexible point requires less delicacy and uniformity of muscular control.

For writing which should be permanent, a heavy flow of ink is necessary. In a few special cases a user requiring rapid drying may prefer a more sparing flow. In this case particularly, he should take special pains to use none but the most permanent grade of ink.

Selection. Don't be content to take the first pen handed to you. Make your selection in a careful and leisurely fashion. Require the dealer to let you try at your own pace, a large assortment of pens in the models and price class which interest you. As to barrels, avoid holders of red, brown, or mottled rubber. Black rubber is better, but the "unbreakable" material now almost universally used is best. Some very cheap pens, including many sold by department stores as bargains, and numerous "brands" which do not give the name of the maker, are made of a composition similar to celluloid which reacts with the gallotannate type of ink (i.e., with good fountain pen inks) in a way to cause precipitation and quick clogging of the pen. A band on the cap to prevent its splitting is desirable. The nib should be tested on several kinds of paper; a really smooth nib should write without catching, even on newspaper. Be sure that (unless you are one who has a special need, as already indicated herein, for a pen with sparing ink flow) the pen

you choose gives a free rather than a scant flow of ink, and that if it does not give a free flow, you arrange for its feed to be properly adjusted before the pen is purchased. (Only a pen dealer regularly doing fountain pen repair work on the premises is likely to be in a position to—or to know how to—make this somewhat difficult adjustment.)

Some bargain pens hold but 7 drops of ink; 20 would be too few. The capacities of fountain pens vary from less than $\frac{3}{4}$ of a cc in the smaller sizes to more than 5 times as much in the larger pens. The consumer is warned not to be fooled by the size of a pen, for this is no sure indication of the amount of ink that a pen will hold. Some small pens have been found to hold as much as and sometimes more than the medium-sized pens. New designs have recently become available in which very large ink capacity has been obtained, with the elimination of the rubber sac, in medium-sized and small pens. Tests of such pens and of other new pens under investigation by CR are not complete and the listings are accordingly, in part, of an interim nature and tentative. It is to be noted that the recent trend to increase fountain pen ink capacity is not an unmitigated advantage. With rare exceptions, such pens produce a much too free flow of ink (increasing to actual dripping) during the feeding of the last fourth or less of ink contents. ¶ Special emphasis is given in the listings to the 4 or 5 pens which appear to provide exceptional value for the money.

Consumers are advised (no matter what representation to the contrary is made by dealers or advertisers) not to purchase pens of unknown brands or brands which do not show a maker's name and address, except the few such pens listed as A and B, respectively.

Ink. The govt. grade ink, either "writing fluid" or "record" strength, as described in an earlier *Bulletin*, will work perfectly in a fountain pen over a period of years, provided that all care is taken to prevent the slightest admixture of other ink or foreign substances. A high-grade ink of this type will fail completely in any fountain pen if this precaution is not most carefully followed, and will fail in certain pens, principally of the transparent type, as noted above, of which the barrel's material reacts with the ink. All ratings are cr 36.

A. Recommended

Esterbrook (Esterbrook Steel Pen Mfg. Co., Camden, N.J.) \$1. Corrosion resisting, stainless-steel-type alloy pen. Feed and nib may be unscrewed as a unit and easily replaced (25c.) when worn. Recent samples of this pen have shown very satisfactory resistance to corrosion by the ink. An especially good buy at its price.

AA1 Sheaffer (W. A. Sheaffer Pen Co., Fort Madison, Iowa) Smooth points probably more easily found in this make than in any other. Service charge of 35c for repairs, \$1.75 for a new cap, to replace one lost by a CR subscriber, considered excessive for a high-priced "Lifetime-guaranteed" pen.

Sheaffer Junior (W. A. Sheaffer Pen Co.) \$2.25. "Iridium" tipped gold pen. Pump-filled, visible ink supply. Large ink capacity.

2 Waterman's Ideal (L. E. Waterman Co., 191 Broadway, N.Y.C.) Probably the best of the flexible-nib pens, somewhat less sensitive to clogging due to

A. Recommended (contd.)

ink-mixing. Although rubber barrel undesirable, No. 52 at \$2.75 (with manifold nib, \$3.25) still an excellent buy. Try large assortment to find smooth-nib pen. Model No. 94, at \$5, with manifold nib and unbreakable holder, also good value. Special types of pen points, such as for music writing, are supplied by Waterman Company; Waterman's selection and repair service believed to be best of all makes.

Vacuum-Fil (Made by Sheaffer) \$2.95. "Iridium" tipped gold pen. An exceptionally well-made and rugged small pen. A good buy at the price in the gold-pen class. Pump-filled, visible ink supply. Did not carry the maker's name. 2

Waterman Ink-Vue, Model No. 84 (L. E. Waterman Co.) \$5. "Iridium" tipped gold pen. New type, pump-filled, visible ink supply. Least subject to flooding difficulty of any of the pump-filled, large-capacity pens, but somewhat less convenient to fill than others in the group. 3

B. Intermediate

Vari-Tone (Distrib. R. H. Macy & Co., N.Y.C.) 94c. Desk stand type. Neat, simple. Has stainless alloy pen which has shown, over some months' use, fairly satisfactory corrosion resistance. The type of pen used provides for long wear by a notable thickening of its material at the nibs; nibs not well shaped. 1

Wasp Vacuum-Fil, 69c. "Iridium" tipped gold pen. Top is twisted to fill. The visible ink supply feature of this pen is not satisfactory, but considering its "iridium" tipped gold pen and, on the whole, good workmanship, it does appear to provide an exceptional pen value at its price. 1

Wards Vis-O-Matic, Cat. No. 845 B 5180 (Distrib. Montgomery Ward & Co.) \$1.29 plus postage. Pen of stainless alloy, "iridium" tipped. A good design in many respects; might warrant an A rating but (presumably on account of reaction between ink and the material of the barrel) flow does not start easily and pen shows some difficulty with clogging. 1

Wahl Eversharp (The Wahl Co., 1800 Roscoe St., Chicago) Ink capacity fair. Nibs generally good. Good finish, good guaranty. Some complaint of leakage at the interchangeable point sections. (cr 31) The \$5 and higher-priced *Wahl Eversharp* ("iridium" tipped gold pen) now is equipped with shut-off device designed to reduce leakage of ink onto the finger grip of the pen, and has movable stiffness-changing device on the pen to adjust the action of its nibs. Possibly to be regarded as a gadget of fairly limited utility. The \$7.50 pen has a not too clearly visible ink supply. 3

Monitor (The Wahl Co.) \$1. Corrosion-resisting stainless-steel-type alloy pen, easily replaceable at 25c—as with *Esterbrook*. Preliminary findings indicate that it may prove to be the equal of or superior to A. Recommended *Esterbrook*. 1

La Ritzie (Distrib. S. S. Kresge Co.) 39c. This may be sold under other names and by other chains. Its distinguishing characteristic has already been described: a 10-carat gold pen point, backed by a stiffening plate of stainless steel with its central portion cut out, its periphery following the outline of the pen. 1

Epenco Iridium Tipped (Distrib. G. C. Murphy Co.) 25c. Well-finished, cheap, lever-filling pen, with gold-plated stainless-alloy point, "iridium" tipped. May, like *La Ritzie*, be sold under other names by other dealers. Time has not yet been sufficient to determine performance of pen point as to corrosion resistance, but preliminary indications are that it will be satisfactory. This or *La Ritzie* may turn out to

B. Intermediate (contd.)

be the ideal pen for school children and for those who are hard on pens or lose them easily. 1

Chilton (Chilton Pen Co., Long Island City, N.Y.) Nibs not of the best; smooth ones may be found. On account of unsatisfactory results of some of its previous novel designs, has changed design several times.

R. H. Macy & Co., N.Y.C. (Marked on gold pen.) \$1.98. Chilton type of filler. 14-carat gold pen, "iridium" tipped. 1

Sheaffer Feathertouch (W. A. Sheaffer Pen Co.) \$5. "Iridium" tipped gold pen, reversible point. Pump-filled, visible ink supply. 3

C. Not Recommended

Parker (ad+cr 34, 35) Subscribers who have a preference for this make of pen (pump-filled, reversible point type, claiming to write a very fine line with the back and medium or coarse with the normal writing surface of the nibs) can obtain from Sears, Roebuck & Co. their *Diamond Medal Pen*, Cat. No. 4 K 5700, which seems the same in its essential details, at a price considerably lower than that charged for the corresponding *Parker* pen.

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Inkmaior and other pens which contain an ink pellet or powder which dissolves in water (with which the pen is filled from time to time, instead of ink).

Good inks are not made by dissolving a powder or pellet in water, and pens of this type present difficult problems in other respects, probably not capable of satisfactory solution. Such pens are not economical, at the prices charged for the ink-tablet refill, which ought to be very cheap indeed.

Montgomery Ward & Co. Cat. No. 845 A 5169. A freak barrel and cap design. Unsatisfactory.

Ink-D-Cator (Inkograph Co., N.Y.C.) \$1.

Stylographic pens or "ink pencils," such as *Inkograph*, or pens with glass stylus or tip. These, though attractive at first examination and use, usually turn out like most 10c store and many druggists' special sale pens, to be a practically useless purchase at any price.

Osteopathy

Corrections and Additions

WHEN CR PUBLISHED Dr. Luttinger's article on Osteopathy in its April *Bulletin* (25c a copy), it anticipated boisterous reactions among osteopaths. We have not been disappointed. Ray G. Hulburt, D.O., editor of the *Journal of the American Osteopathic Association*, writes in his columns that CR has received "an avalanche of protests from subscribers," though how he could know that without access to our office is far from clear. Perhaps his apparent declaration of fact is to be understood only as a hopeful surmise. The fact is that our correspondence, due to the article on Osteopathy, has been neither appreciably more nor less than that dealing with many other subjects treated in CR *Bulletins*. In addition to a number of letters of commendation on the article, we have received the following which voiced varying degrees and manners of protest: two from anonymous sources; fifty-nine from Doctors of Osteopathy; ten from Doctors of Chiropractic; and forty-eight from laymen.

In some cases, there has been the necessity of deducing the professional identity of our correspondents from the internal evidence of their letters, due to the common practice of printing only the title "Dr." on the letterheads of Doctors of Osteopathy. Can it be that a professional inferiority complex leads so many of them to omit the degree of D.O. or the word "Osteopath" from their stationery and simply to use the ambiguous title "Dr."?

Most of these 119 complainants have written us highly interesting, if not always enlightening, letters. Our own adjectival skills do not permit us to make rebuttals in kind, and no good purpose could be served by our attempting them. An anonymous writer accuses CR of "ultra modern hi-jacking." The epithet which Father Coughlin applied to President Roosevelt turns up again and again. CR is "an enemy to society." We have been guilty of publishing a "dastardly attack" on Osteopathy. "An absolute [sic] false article," is the way one D.O. characterizes Dr. Luttinger's piece. Our article is said to "reek with fraudulent statements." We are charged with "attempts to obtain money under false pretenses." Dr. Luttinger is said by one to be a man "purple with indignation," but another, himself a D.O., says: "First I must congratulate you on the comparative fairness of the report in a matter so controversial." One writer says that he is "sorry to see us in the vicious clutches of the *Moron Medical Trust*." Another hints that we may be "under the subsidy of the American Medical Association." Berating us for "falseties" [sic] which he predicts will act as a "boomerang" [sic], a D.O. writes: "Evidently a portion of your stock is owned by the A. M. A." (Perhaps Dr. Fishbein, who has been antagonistic to CR, thus made a CR "stockholder," will now change his attitude.) A Doctor of Chiropractic protests Dr. Luttinger's article on Osteopathy, and then, oddly enough, writes: "Chiropractic is the only science that locates and adjusts the cause of disease." One correspondent surmises: "Your service no doubt cannot mean very much to your subscribers." But the associate editor of the *Journal of Osteopathy* writes: "Many thanks for publishing Paul Luttinger's warped mouthings on Osteopathy. . . . It was so more to champion the cause of that science . . . than would anything we ourselves might say." The D.O. warns us that we "surely jumped on to a Tartar," and a number of writers threaten reprisals of wholesale cancellations of CR subscriptions. A lady D.O., reminding us that she has persuaded many to subscribe to CR, announces that she "can just as easily influence them to discontinue." We were almost bowled over at our own illiteracy when we read on one letterhead the following degrees: B.L., M.A., D.C., D.E., F.S.D., D.O., O.D., Ph.D.—all belonging to one human being! Our self-respect was restored when we were informed that the recipient of all these academic distinctions sells, among other dietary products, *Nutrino*, "A Dynamic Nut Butter."

An uncommonly distinguished D.O. writes that our publication of Dr. Luttinger's article did not sound our "death knell" for the simple reason that it had already been sounded when we adopted the policy which "one of [our] editors confessed to Mr.

Arthur E. Morgan of the T.V.A. concerning the razor blade episode. Namely, an admission that [CR] had given an 'A' rating to a blade that was decidedly inferior to all others because the Cooperatives were loaded up with them and that [CR] favor the Cooperatives." The complete falsity, nay impossibility, of this little story may be tracked down by any interested CR subscriber. Our razor blade ratings are a matter of record, and a glance at the CR *Bulletins* will show that the only listings of cooperatives' razor blades, so far, have been as *C. Not Recommended*. Our D.O. "informant" has, though requested to do so, failed to supply us with further details regarding the circulation of this falsehood which he credits to Mr. Arthur E. Morgan, distinguished New Dealer of T.V.A. fame.

The protests received from laymen have not been less interesting. One of them offers the following proof of osteopathic benefits: "I am a well man today at Sixty and would of [sic] been dead had I continued taking drugs." We are not disposed to deny that drugs have shortened the lives of multitudes; we doubt, however, that the gentleman of Sixty could know that he would have been dead but for osteopathy. "I owe so much good health and happiness to mechanical medicine [sic]," writes another. Still another, striving to maintain impartiality between osteopathy and scientific medicine, writes: "They are both needed and are God sent." "The most ignorent [sic] . . . article I have ever seen," comments a layman who adds that Dr. Luttinger "is just one of the 95% of the disonest [sic] MDs." One layman, noting that CR has on previous occasions been "antagonistic towards the indiscriminate use of medicine," is now puzzled to "find any logic for [our] shiftlessness [sic]." A lay enthusiast for osteopathy writes: "I know from personal observation that osteopathy can 'make the blind to see, the deaf to hear, the lame to walk.'" But not, we observe, D.O.'s and their clientele to spell correctly! From a New York D.O. we received a "chalange [sic] to those prejudiced and biased statements." From Denver we are admonished to confine our research "to matters mundane and let the spiritual [sic, apparently meaning therapeutic] affairs be judged by the individual."

We are pleased to record that a number of Doctors of Osteopathy wrote us letters which are models of fair and dispassionate statement, contrasting sharply with the vituperation of some of their colleagues. Where, however, the latter have called errors of fact to our attention, we are pleased to make correction. A fact is a fact no matter how ill-tempered its presentation. In fairness to ourselves, our subscribers, and the osteopathic profession, as well as in keeping with one of CR's basic principles, we call attention to the following errors, with sincere regret that they tended to impair the usefulness of an otherwise valuable presentation:

1. Dr. Luttinger's article referred repeatedly to the founder of Osteopathy as Dr. Sill. This was a typist's error and, contrary to several suggestions, no pun was intended. The name of the founder was Still.

2. Andrew T. Still, it appears, was born in Lee County, Virginia, and not in Buncombe County,

North Carolina, although one D.O. correspondent speaks of the latter place as Dr. Still's "native county."

3. Dr. Luttinger stated that "the flag of Osteopathy was unfurled" by Dr. Still, in Kirksville, Missouri, June 22, 1874. The "unfurling" took place on June 22, 1874, but it was not in Kirksville, Mo. It was not until several months later that Dr. Still moved to Kirksville.

4. The American Osteopathic Association publishes a monthly, not a weekly, journal.

5. On page 13, first col., first complete paragraph, line 8, the word "including" before New York should be changed to "excluding," so as to read: "In ten states, excluding New York, and in the District of Columbia, osteopaths have unlimited scope. . . ." In line 10, instead of saying, "In all the other states, they are not permitted to use medicines nor the knife," it should be said that in seventeen states they are restricted in the use of drugs, or surgery, or both (according to "Osteopathy as a Profession," issued by The American Osteopathic Association in 1936), and that in some of the remaining states the law provides that osteopaths may practice osteopathy as taught in the recognized osteopathic colleges, which may be taken to mean that they may practice osteopathy and medicine generally.

6. In addition to the graduates of the Chicago and Kirksville osteopathic schools, the graduates of Kirksville are also able to qualify to practice osteopathy in New York State.

7. Dr. Luttinger states that "in 1930, 1,760 students graduated from the seven osteopathic colleges." He should have stated that 1,705 students were enrolled in these colleges in that year.

8. The editor of the *Journal* of the American Osteopathic Association says that Dr. Luttinger is two years off on the date the American School of Osteopathy [Kirksville, Mo.] obtained its charter. Dr. Luttinger was following Dr. Morris Fishbein ("Fails and Quackery in Healing") when he stated that the school obtained its charter in 1894. We take it that the editor of the J.A.O.A. knows his dates.

9. Dr. Luttinger said: "They have in most states (fourteen, including New York) at least one representative among the examiners." The figure "fourteen" is correct, but the word "most" before "states" is an obvious error.

10. Dr. Luttinger's statement that the number of students in osteopathic colleges "has been falling steadily" appears incorrect. According to Asa Willard, D.O., in 1927 there were 1,559 students enrolled in these colleges and in 1935, there were 1,826. For 1936, the pamphlet *Osteopathy as a Profession* reports 2,026.

11. Dr. Luttinger said: "There are nearly 8,000 osteopaths all told in the United States." Helen M. Dunning, D.O., declares, with heat that appears hardly warranted, that this "under-estimate" is "false and malicious." The figure for 1936 given in the pamphlet *Osteopathy as a Profession* is 8,733.

Legal Information for the Layman

To Avoid the Creation of a Right of Way Across One's Land

THE OWNER OF A PLOT OF LAND over which persons on foot or by horse or by vehicle habitually take a short cut should adopt the necessary steps to protect his ownership against the possibility of an "easement of way" developing because of the continued passing of people across the land along the short cut. The practice of passing and repassing across the property is continued for a sufficiently long time (this time is 20 years in the state of New York) the people using this short cut and passing and repassing across the land will acquire a right to do so. Thereafter the owner of the land will be unable to deprive them of this right. To avoid this result without incurring the ill-will of the neighborhood, one would come from permanently ending the right of people to use a short cut, it is necessary to block it off for a day or two every few years. By so doing, the owner of the land exercises his right and asserts that authority over it which prevents the development of an absolute right of way in favor of others. The accepted procedure is to block the path "keyed" by means of cutting across the land, using for that purpose some semi-permanent obstruction such as a fence. If this is erected for two days every three or four years; a sign attached setting forth that trespassing is forbidden across the land, with this notice signed by the owner, evidence obtained and perpetuated that the sign and fence were erected by properly dated and witnessed photographs (for example) and that persons accustomed to use the right of way were compelled, during the period of the obstruction, to travel some other path. The owner of the land will always be in a position to refute the charge that the passing and repassing of the public has developed into an easement, and may maintain his right to private use of his own land, keeping it perpetually free of the right that would otherwise in time lodge in the public to pass and repass.

WILLIAM S. WEISS

Editors' Note: This is the first of a series of short articles by Mr. Weiss on legal questions important for the layman.

Corrections to: Annual Cumulative Bulletin, issue of September 1936

Col. 372 Vacuum Cleaners: The price of the *Electric* (for cash) is \$97.75 and not \$97.50 as stated, the latter being the price on installment.

Col. 373 Carpet Sweepers: The regular price of the *Elmer's Elite* is stated by the manufacturer to be \$7.50, not \$7.

Col. 409 Cigars: *Phillies* (Layuk Cigars Inc.) were erroneously stated to have a Puerto Rico filler and shade-grown wrapper. On re-examination the filler is found to be mixed Pennsylvania and Havana and the wrapper Sumatra. The rating *B. Intermediate* is not changed.

Signs and Portents

IT IS TIME that all the manufacturers of foods, drugs and cosmetics, as well as the publishing and broadcasting interests deriving large revenues from one or more of these industries faced the music. A new and more drastic Food, Drugs and Cosmetic Act is going to be enacted whether some few factors in the industry like it or not, and the sooner the law is enacted the better it will be. Those who fostered the fight between the Senate and the House over the question of advertising jurisdiction probably thought they had performed a great feat. If they continue to perform such stunts in an effort to block the bill, the entire industry will find itself in such a maze of state legislation that these people will wish they had played the game square. (*The Drug and Cosmetic Industry*, August, 1936.)

This trade journal's prophecy is a tribute to the effectiveness of aroused consumer opinion. Some, no doubt, felt that their efforts had come to naught last June when S. 5 failed of enactment. Such persons, given evidence of what was really going on in the House and the Senate, should take heart and understand that if consumers once realize how potent their influence can be, they will insist on a really satisfactory food, drugs, and cosmetic act—and get it.

YOU AND I have been incredibly stupid. Are there anywhere in this country two businesses absolutely dependent on one another for their livelihood, that behave as we do? What is this foolish idea about an editor contaminating virgin skirts by contact with advertising men—are we not in exactly the same business, that of making Mummy and Daddy discontent with what they have? We call it raising their standards of living—but no matter what we call it, it is nothing more than spreading discontent with what they have and joggling them out of their rut by constantly flaunting new things before them. And to do it successfully, I have got to know what you plan to flaunt and you've got to take my judgment as to just how much they will take at one dose. It's a lovely little aura we editors have, and you are pretty smart boys, but just think what we might do together—my beauty and your brains, instead of alone together. (A quotation from an address by Mrs. Jean Austin, Editor, *The American Home*, in *Domestic Commerce*, June 10, 1936.)

From the consumer's point of view, it is a pity that such frank discussions between editors and advertising men are rarely reported in journals commonly read by the general public. No doubt if readers of household magazines were more conscious of the various subtle attempts to get them to buy this or that, there would be an even more rapid growth of consumer skepticism than that which is already troubling the advertising men.

ON THE ASSURANCE of the State of Florida that it will withhold from market at all times all oranges which are so unripe as to fall below the standard of 8 parts of sugar to 1 of acid, and which may be artificially colored so as to conceal inferiority, the United States Department of Agriculture has agreed to extend the date upon which it had intended to take action, from Sept. 1, 1936, to Sept. 2, 1937.

The Department on July 16, 1934 and on November 23, 1935, had announced to the citrus industry that the Federal Food and Drugs Act required the addition of color to oranges to be plainly and conspicuously declared in all instances; that where the addition of color to oranges concealed inferiority, the fruit even though satisfactorily labeled, would be deemed adulterated, and that after Sept. 1, this year, federal action would be taken whenever adulteration occurred. (Release of U.S. Dept. of Agric., Washington, D.C., August 6, 1936.)

Housewives who had looked forward to making

orange marmalade are to be disappointed for another year. The practice of dyeing Florida oranges, though clearly an adulteration under the national and state food and drugs act, will not be required by the enforcement officers of the government to be disclosed to the purchaser until 1937.

THE UNITED STATES GOVERNMENT obtained, by means of closed bids, a contract from the Trade Laboratories, Newark, N.J., to supply the government with regular 2 ounce tubes of toothpaste according to strict government specifications at a price of 3 1/3 cents per tube for use in C.C.C. Camps. This toothpaste which would retail for 25 cents has passed the rigid tests of the Bureau of Standards in Washington, D.C., and is certainly as good as, if not considerably better than many of the current brands on the market. Consequently, it is obvious that vast profits are being realized through the sale of these well-advertised toothpastes. In the same bid to the federal government in which the Trade Laboratories offer was accepted, several other manufacturers of well-known brands tendered bids of their own. Some of these bids were as follows:

Lehn & Fink, makers of Pebecco.....	7 cents
E. R. Squibb & Sons, makers of Squibb Toothpaste	14.07 cents
Colgate-Palmolive-Peet Co., makers of Colgate's Toothpaste	13.03 cents
Best Toothpaste	4.97 cents
Lambert Pharmacal Co., Listerine Toothpaste	14.00 cents

("A Plan to Utilize Dentifrice Sales for the Advancement of Dental Public Health," by George D. Trattner, D.D.S., in the *New York Journal of Dentistry*, May, 1936.)

Out of this significant item of information can be developed an interesting project for classes in Consumer Education. Make a comparison between the prices charged the government per ounce, or per two-ounce tube, and those charged the consumer for the same unit. Study the claims made for these tooth pastes in their latest magazine advertising. How much of the difference in the unit prices of tooth paste is determined by the fact that advertising claims lend uniqueness and special values to the product in the consumer's mind?

CORPORATIONS are governed, not by one man, but a board, with a profuse sprinkling of vice-presidents in charge! Generally such a company can support a pretentious research program, but generally major interests are divided between several groups and considerable internal politics exist. Into this environment the infant research is born—infant in accomplishment but fully matured as to front. The slow build-up is not for them. A research director is selected. Under him a staff of Ph. D.'s is put to work on the company's problems, real or fancied. But immediately politics begins to work. Either the research director must step down before the committee of V. P.'s and the politically controlled board, or... play politics....

Since such a research laboratory is, in its prime function, if not intention, a show place, it must be kept scrupulously clean, and all work in it prohibited, since the confusion of a research laboratory where actual, creative work is being done is rarely appreciated by the out-of-town buyer whom the V. P. in charge of sales so keenly shows about the place. ("Sentries of Small Business," by Mark H. Wodlinger in *Nation's Business*, April, 1936.)

This, no doubt, is an accurate picture of the sort of laboratories that form the background for well-groomed SCIENTISTS in white coats that are frequently shown in advertisements in the popular magazines. Real scientific research is apt to be a more untidy affair.